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A Consideration OF SOME OF THE MALADIES IN WHICH SPLENECTOMY MAY BE INDICATED.*

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PHYSIOLOGICALLY the spleen is of but moderate importance, and its removal does not cause serious changes in the human economy. The splenic vessels have only endothelial linings, and the blood comes in direct contact with the splenic pulp. The function of the spleen is obscure. From the fact that it contains non-striated muscle fibre, which Keith,[1] in his splendid contribution to our knowledge of the nodal system shows to be the most primitive form of control, we get an idea of its ancient heredity. We know that the cells peculiar to the spleen have phagocytic properties, that the spleen develops hæmolytic ferments, that it acts as a mechanical strainer, and that it diverts a large quantity of the blood from the general to the portal circulation for a definite purpose. The portal system of the liver has two sources: first, the gastro-mesenteric portal radicals which have to do with the metabolism of food intake; and second, the splenic portal system which has a function perhaps somewhat similar connected with the blood. It is to be remembered that the spleen derives its blood-supply from the cœliac axis, as do also those derivatives of the foregut, the liver, the stomach, duodenum, and pancreas. The fact that the spleen enlarges during the digestive period and contracts in the interval is also significant. From this somewhat scanty knowledge we conclude that the spleen removes from the blood bacteria and protozoa, toxic products and worn-out blood corpuscles, especially erythrocytes, and sends all this material to the liver for destruction of the noxious agents and for conversion into tissue-building substances of such food elements as it may contain. While the spleen has been classified with the organs of internal secretion, there is little to substantiate the hypothesis that it possesses an important internal secretion. Organs of internal secretion are of two general types: First, those so closely associated with the sympathetic nervous system that they act in some respects as one organ—for example, the adrenals and hypophysis—and in which the internal secretions affect the tissues largely through the sympathetics; and second, those producing an internal secretion which is carried through the blood stream and acts in the body cells directly like the thyroid secretion in metabolism (Plummer,[2] Kendall[3]). It is interesting to note that most of the organs whose internal secretion acts to a great extent through the blood stream were originally external secretory glands like the thyroid, or still possess an external as well as an internal secretion like the pancreas, testicles, &c.

Pathologically the spleen is of very great importance. It is a link in a chain of organs which, under conditions of disease, produces changes in the blood that may eventually cause death. However, the spleen constitutes only a single weak link in the chain, a link which may be removed. In many instances its removal breaks up a vicious circle, and the patient is thus restored to health even though the spleen itself may be only the agent of destruction rather than its cause. This conception of the function of the spleen brings into the foreground its relation to the pathology of the blood as a tissue—a tissue composed of leucocytes, erythrocytes, and platelets, the plasma of the blood having the relation of connective tissue.

One hundred and thirty-five splenectomies have been performed in the Clinic for various conditions. There were 12 deaths, a mortality of 8⅞ per cent. This takes into account all deaths that occurred in the hospital after splenectomy without regard to their cause or the length of time they occurred after operation. This method of computation works some hardships, but it seems to be necessary in order that our statistical values may have a common basis. While the function and pathology of the spleen is more or less obscure, the outstanding fact in these cases was that, with one exception, the spleen was enlarged and the enlargement concerned those pathologic states with which it was associated.

The enlargement of the spleen may at times be a work-hypertrophy, such as occurs in hæmolytic jaundice. In other cases, as in pernicious anæmia, the spleen may have been stimulated to pernicious activity. In splenic anæmia the blood destruction originates perhaps within the spleen itself as a result of those agents which cause the enormous growth of fibrous tissue in the spleen and the terminal cirrhotic process in the liver. As the blood picture is not characteristic the estimation of the relation of the spleen to these various disorders depends largely on our ability to ascertain the physical condition of the spleen. Unless the spleen is enlarged we have at present no evidences which necessarily denote splenic disease.

A somewhat careful investigation as to the value of percussion in detecting enlargement of the spleen not sufficiently marked to be discovered by palpation does not give percussion as high a place as we have been led to believe it held. On many occasions I have carefully mapped out what I concluded to be the area of splenic dullness by percussion and on opening the abdomen found I had been greatly deceived. Much of the belief in the accuracy of outlining the spleen by percussion has been due to the fact that this method was employed in such diseases as typhoid and malaria in which enlargement of the spleen was found after death. In the large majority of cases little real knowledge of the physical condition of the spleen will be obtained unless it can be felt by careful palpation on full inspiration with the patient lying on the right side. This is unfortunate, as the spleen must be enlarged several times its normal size to become palpable. Carman is now developing roentgenologic evidence as to splenic enlargement which, it is hoped, will produce reliable information.

For convenience the diseases with which the spleen is concerned may be roughly classified into three groups: (1) Splenomegalias of parasitic origin; (2) splenomegalias of probably toxic origin associated with anæmia and cirrhosis of the liver; and (3) splenomegalias associated with blood dyscrasias.

Splenomegalias of Parasitic Origin.

Under normal conditions parasitic agents collected in the spleen are sent to the liver for destruction, the spleen appearing to have little germicidal power. Should parasites accumulate beyond the ability of the spleen to rid itself of them, such secondary conditions occur as are shown in the splenomegalias of typhoid, malaria, syphilis, tuberculosis, and other infections. Eventually such cases may come to operation because of the failure of medication to reach the organisms sequestered in the spleen which have a constant tendency to reinfect the whole body.

A study of the sequestration of parasites in the spleen has many interesting features. We must believe that a certain number of bacteria gain entrance to the blood, but that in health they are eliminated in various ways, many being removed from the blood stream in the spleen and destroyed in the liver. Adami[4] has shown that bacteria are constantly picked up in the duodenum and upper jejunum and sent to the liver for destruction, and that the pigmented areas frequently seen in the liver at post mortem are the result of collected pigment from slaughtered bacteria. Bacteria in the blood are derived from various sources. Eccles[5] in commenting on the power of the body cells to resist bacterial invasion calls attention to the fact that such resistance is a response to the action of bacteria that are early introduced into the blood stream, and that an early introduction of bacteria, such as occurs in some instances through the tonsils, is essential to the development of this defence. If this is true the tonsils and kindred organs may on occasion assume the rôle of immunisers, permitting just a sufficient number of bacteria to enter the circulation at an early stage of the infection to develop resistance to the specific organism. Vaughan[6] points out that typhoid infection of the body is present during the prodromal period, and that what we call typhoid fever is the defence manifestation set up as the result of this infection, the period of incubation being the time necessary to educate the body cells to resist the typhoid

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bacillus. From this standpoint it may be said that bacteria circulating in the blood at times have a definite value. Must we believe that all the blood of the body passes through the spleen in a haphazard manner in order to strain out the bacteria, or does the spleen have a definite attraction for certain types of bacteria? Rosenow's[7] extraordinary work showing the specificity of bacterial infection would lead us to believe that the spleen specifically attracts to it from the blood stream the various bacteria and toxic agents which it is its function to gather up for elimination.

While we have seen a number of cases of typhoid splenomegalias and operated on several typhoid abscesses of the spleen, none have required splenectomy. We have not seen a case of the ague cake of malarial plasmodium requiring operation, although Jonnesco[8] has reported a number of splenectomies for this condition in which the operation was necessary because of inability to destroy the plasmodium in the spleen and relieve the chronic cachexia and anæmia by medication. Jonnesco's mortality was high, but the patients who recovered from the operation were cured.

We have had but one case of probable primary tuberculosis of the spleen—that of a young girl in whom there was no other evidence of tuberculosis at the time of the operation, but who died within six months of generalised tuberculosis. We must believe it possible, therefore, that the splenic condition was but the dominant feature of an unrecognised dissemination of tubercle bacilli.

Four patients have been splenectomised for syphilitic splenomegalia. Three had definite histories of lues, all had positive Wassermanns, and spirochætes were found in the removed spleens in two cases. Two spleens contained a few small typical gummas. In three cases gummas were found in the liver. The patients were markedly anæmic and had failed to improve satisfactorily under salvarsan, neosalvarsan, and prolonged mercurial treatment. Removal of the spleen was followed immediately by an extraordinary improvement in the anæmia. After operation the patients were again placed on antispecific medication and their recovery was prompt and permanent.

For splenomegalias of pyogenic origin we have removed the spleen nine times, with one death. These cases will be reported in detail later.

Splenomegalias of Toxic Origin Associated with Anæmia and Cirrhosis of the Liver.

The splenomegalias in this group were due evidently to toxic products which had been removed from the blood and which, passing to the liver, evidently produced hepatic cirrhosis. We infer that such toxins are filtered out in the spleen and we know that in certain diseases removal of the spleen not only cures the anæmia but tends also to check the progress of the cirrhotic process in the liver such as occurs in Banti's disease.

It appears that Nature has several methods of destroying toxic agents, among them being absorption, elimination, and encapsulation. It may be that the latter of these processes is active in cirrhosis of the liver. The spleen collects from the blood and distributes through the radicles of the portal vein certain toxic products which for a time, in the earlier stages of the disease, the liver is able to destroy and eliminate. When it fails in this elimination the diffused poisons are encapsulated, this diffuse encapsulation resulting in portal cirrhosis. It is probable that most toxic agents which act as causes of portal cirrhosis—alcohol, for example—are derived through the mesenteric portal system, but sufficient evidence is now at hand to show that the same process may be set up by agents derived from the spleen, and that the occurrence of splenomegalia in connexion with portal cirrhosis may indicate a relationship between the splenomegalia and the causation of the cirrhosis. Another view in regard to the splenomegalia is that it is compensatory to the hepatic failure, but as the removal of the enlarged spleen in the recorded cases appears to have done no harm in any of the types of hepatic cirrhosis, and often resulted in great good, the former hypothesis appears the more reasonable.

Clinically, splenic anæmia is the best-understood member of this group, but it rests on an insecure pathologic basis. There are many varieties. An enlarged spleen and the secondary type of anæmia, however, are more or less characteristic, although the anæmia may be absent for long intervals.

Gaucher's disease is usually included in the splenic anæmia group. Brill and Mandelbaum,[9] however, point out that it could be classified more naturally with new growths, as it is essentially a disease of endothelial characteristics. Herzog[10] points out that the anæmia which results from Gaucher's disease is characteristic of splenic anæmia, but admits that after death from Gaucher's disease the peculiar endotheliomatous growths are found in the liver and other organs. When the spleen was removed before these terminal changes appeared, the patients were cured, as occurred in cases cited by Herzog and also in our experience. Gaucher's disease usually begins before the thirteenth year and runs a chronic course, often lasting 25 years or more.

Von Ja'tsch's disease, anæmia pseudoleukemica infantum, according to Giffin,[11] is probably best classified with splenic anæmia, the high white-cell count and lymphocytosis being due to a peculiar reaction of the infant's blood. While the milder types of von Jaksch's disease are usually cured by general treatment, splenectomy is required for the more severe types.

There is less evidence to indicate that a splenomegalia peculiar to it may be a cause of biliary cirrhosis, but the results in the few cases of splenectomy we have performed in cases of biliary cirrhosis have led us to believe that to a certain degree it has a definite relation to the hepatic condition and that the latter may be favourably modified, at least in some cases, by the removal of the spleen.

In splenic anæmia the spleen is enlarged, and thus its power of destroying red cells is increased as is shown by the increase of hæmatin and the relative increase of leucocytes in the splenic vein. There is also a great increase of connective tissue in the spleen, which may be the result of some toxic stimulant. Secondary cirrhosis of the liver, which completes the syndrome of splenomegalia and anæmia as described by Banti, represents a late stage of the process. In all, we have done 43 splenectomies for splenic and allied anæmias (Gaucher, von Jaksch's disease, &c.). Five of the patients died. The mortality in this group was too high, and represents badly chosen cases in our earlier experience; it can be readily reduced to 5 per cent. The improvement that takes place on removal of the spleen in successful cases is surprising. Even in late stages of the condition in which there is marked cirrhosis of the liver the patients may be apparently cured. It would seem that the great power of the liver in regenerating its specific cells must be utilised to the full extent to produce the improvement which occurs after splenectomy for advanced Banti's disease.

In several of our cases of splenectomy for splenic anæmia in which there was marked splenomegalia with advanced cirrhosis of the liver and ascites the patients were restored to health—in one instance now for more than seven years. One of the typical features of splenic anæmia is the occurrence of hæmorrhages from the stomach. Possibly 75 per cent. of all the severe hæmorrhages from the stomach do not have their origin, as is so frequently thought, in peptic ulcer, but arise from some unknown gastrotoxic condition. They occur more often in adult males. Usually there are no previous symptoms, gastric or otherwise, and after recovering from the hæmorrhage, which may have been very severe, the patient becomes symptomatically well. These hæmorrhages markedly resemble those which occur in splenic anæmia. Some authorities believe they are the result of unrecognised cirrhosis of the liver, though not necessarily from the rupture of enlarged veins. In several cases of gastric hæmorrhage in which we explored the stomach during the period of bleeding widespread superficial changes in the gastric mucosa, but no peptic ulcers, were shown. Armstrong[12] has reported similar cases in which he was able to check the hæmorrhage by passing a hot iron over the bleeding surfaces. In none of the reported cases, however, was the condition of the spleen mentioned. In a very remarkable instance of this kind in which the patient had had a number of operations for gastric hæmorrhage, with recurrence of the hæmorrhage whenever the hæmoglobin rose above 45 per cent., Balfour[13] explored the spleen and found that it was more than twice the normal size. In the liver were some slight changes which might be regarded as a possible early cirrhosis. The spleen was removed; the man gained 60 pounds in weight; his hæmoglobin rose above 80 per cent., and he has been in perfect health for one year. In Balfour's opinion many cases of hæmorrhage from the stomach of unknown causation may be of splenic origin, and he suggests that in all operations for gastric hæmorrhage the

condition of the spleen be noted, since in this way valuable data may be accumulated. It is quite possible that up to the present time we have been recognising as splenic anæmias only those gross conditions which may be the terminal stages of a more frequent malady.

The resemblance between splenic anæmia with terminal portal cirrhosis of the liver, and those cases of portal cirrhosis in which the enlargement of the spleen is apparently secondary to the cirrhosis, has led us to remove the spleen in three selected cases of advanced portal cirrhosis with splenomegalia, ascites, &c. In one instance it was impossible to tell from the history or physical examination of the patient whether the portal cirrhosis was primary and the splenomegalia secondary, or the reverse. The operations are too recent for any conclusions, but the patients who recovered showed a remarkable improvement of the anæmia and a lessening or disappearance of the ascites, and from a wholly incapacitated state are now in fair health In three instances we removed an enlarged spleen associated with biliary cirrhosis. These persons were moderately jaundiced. and had large livers and spleens. Their condition has been very greatly improved, and they have been able to return to work, though two still have slight jaundice. One is apparently cured. One of these cases may have been confused with Hanot's cirrhosis, if there be such a pathologic entity.

Splenomegalias Associated with Blood Dyscrasias.

In fœtal life the spleen, the bone marrow, the lymphoid and adenoid structures of the body, and probably the liver, are concerned in the formation of blood. The most primitive blood is white blood, the white cells descending from the mesenchyme cells and the red cells derived from the white cells. All animals having but one kind of blood have white blood. The earliest fœtal blood is white. Leukæmia has been regarded as a cancer of the white-blood tissue—an uncalled-for, functionless production of embryonic cells in which all the original blood-forming organs take part—just as sarcoma concerns embryonic connective-tissue cells and carcinoma concerns embryonic epithelial cells. Leukæmia varies greatly according to the particular group of organs in which the diseased blood production is most marked. However, clinical evidence that cannot be ignored has been brought out recently which at least leads to the conjecture that leukæmia may be more definitely connected with certain organs than we have been led to believe. In splenomyelogenous leukæmia, for instance, the application of the X ray over the spleen at first acts most beneficially in reducing its size, decreasing the white cells, and improving the anæmia, but later the ray loses such power. Radium applied at several points over the spleen has a much more rapid effect than the X ray. In several cases in our experience applications of radium caused so great a reduction in a huge spleen within a month that it could not be felt beyond the margin of the rib. Coincidently the white cells dropped from several hundred thousand to less than 10 000. Our experience with the X ray in the treatment of splenomyelogenous leukæmia does not indicate that these spleens so markedly acted on by radium will remain permanently in abeyance. It is to be noted that after the improvement produced by the X ray ceases enlargement of the spleen again takes place coincidentally with the increase in the white cells. This leads to the question as to whether or not, during the period of abeyance, splenectomy might not have had a further effect in extending the palliation in certain types of disease allied to splenic leukæmia.

An experience with a case recently is at least suggestive :—

CASE A171009.—A woman, aged 56 years, suffering from splenomyelogenous leukæmia, with the usual blood picture, was admitted to the clinic for examination on Sept. 15th, 1916. White blood cells 203,000. The spleen filled the left half of the abdomen. Over the splenic area was an X ray dermatitis. The history developed the fact that X ray treatment had at first been of much benefit. The spleen was markedly reduced in size and there was a great reduction in the number of white cells and improvement in the patient's general condition. Later the X ray lost its effect, the spleen rapidly increased in size, the leucocyte count went up, and the patient's general condition went down. The spleen, weighing 1100 gm., was removed. The outer portion of the organ was somewhat sclerosed, evidently the result of the treatment. Possibly this outer sclerosis prevented further effect from the X ray on the hyperplastic splenic pulp sequestered in the middle of the organ. The leucocytes dropped from 203,000 to under 50,000 in the first ten days after the operation.

We must anticipate that this patient will eventually die with leukæmia. A study of the future course of the disease will be interesting. Several patients in our experience in whom the spleens were large and the white blood cells up to 30,000 and who had been diagnosed and treated as leukæmic were cured by splenectomy. I do not wish to be understood as recommending splenectomy as a cure for leukæmia, but it seems consistent. especially when we remember our fogginess of mind in regard to the early leukæmic state, that in selected cases of this type splenectomy may be considered after the application of radium and during the period of great improvement.

Pernicious anæmia has been pictorially spoken of as a cancer of the red-cell tissue. Post-mortem examinations have usually shown that the spleen is not enlarged after death from pernicious anæmia; that, if anything, it is atrophic. Therefore, it has been assumed that the organ does not have anything to do with pernicious anæmia, although in many reported cases it was distinctly enlarged. In the cases in which we have removed the spleen for pernicious anæmia it was found enlarged from two to ten times its normal size, with one exception. In this case the patient was in a terminal condition, and the spleen was slightly atrophic (187 gm ; normal 195 gm., Sappey). This suggests that the shrunken spleen found at post-mortem is a terminal condition.

Previous to the time of Eppinger's[14] reports the spleen was removed in a number of instances of pernicious anæmia under a mistaken diagnosis. In one of our patients in whom the spleen was large, the anæmia marked, and the blood lacking in pernicious cell characteristics, the spleen was removed under the impression that the disease was splenic anæmia. This patient lived in fair health for three years and died from an intercurrent malady. Before death, the condition was proved to be pernicious anæmia by the development of a typical blood picture.

That pernicious anæmia in any great percentage of cases depends entirely on splenic disease I do not believe can be held, but clinical experience has proved that the spleen may be a factor of considerable importance. The removal of the spleen in suitable cases after the failure of other therapy has given rise to prolonged betterment, but splenectomy does not seem to prevent the development of cord changes, nor do the pernicious cells entirely disappear from the blood. Eppinger believes that these manifestations are terminal, and that if the spleen is removed sufficiently early they will not appear. The time of observation is as yet too short to warrant speaking with any degree of authority as to what the ultimate possibilities of splenectomy in the therapeusis of pernicious anæmia may be. It has been said that if the spleen is the mother of pernicious anæmia, there must be many fathers.

In 48 cases of pernicious anæmia in which we removed the spleen there were 3 deaths. I am convinced that the deaths were unnecessary, as none occurred in the last 29 operations. The patients who died were in an advanced stage of the disease and were operated on during crises without transfusion, In the operations performed when the patients were on the up grade or when we were able to start the up grade by transfusion there were no deaths. Miller[15] says that the removal of the spleen may act either by stimulating the bone marrow or by increasing the resistance of the erythrocytes.

To Giffin, who has paid most careful attention to these cases, the writer is indebted for the following summary of the indications for splenectomy in pernicious anæmia.

"There is no evidence that splenectomy has cured pernicious anæmia. A review of 48 cases of splenectomy for pernicious anæmia demonstrates a definite gain in the blood, the weight, and the general condition during the first three months of the post-operative period in 78 per cent. of the cases; during the second three months period, 68 per cent. of the living patients maintained their gain. A consideration of the advisability of splenectomy would seem to be warranted at present chiefly in young and middle-aged patients of good general resistance, who show evidence of active hæmolysis and in whom the spleen is moderately enlarged. The estimation of the blood-derived pigments in the duodenal contents is valuable in determining the degree of hæmolytic activity present at a given time. A comparison of the degree of hæmolysis with the severity of the anæmia would seem to be indicative of the productive power of the bone marrow. Pre-operative treatment, especially transfusions, should be employed to influence the patient's

general condition and to improve the characteristics of the blood picture. The operative risk is increased when the hæmoglobin is below 35 per cent. and the erythrocyte count less than 1,500,000. Post-operative transfusions have not been given as a routine procedure, but transfusions have been successfully employed in post-operative relapse."

Hæmolytic jaundice presents a brighter picture than pernicious anæmia, and with splenic anæmia represents the triumph of splenectomy. It would appear that the function of breaking down worn-out corpuscles is exercised by the spleen in response to some condition of the red corpuscle itself. It has been shown that the cells peculiar to the spleen have phagocytic properties, but in most careful investigation Herzog was never able to find red cells engulfed by splenic cells. The ferment theory, therefore, appears to fit the conditions best, although it is a question whether such ferments are produced in the spleen or carried to the spleen to produce their effect. Chauffard and Widal [16] have shown that in hæmolytic jaundice the red corpuscles are more fragile than normal, as they circulate in the blood, and their fragility is apparently their death-warrant in the spleen. Some organ or tissue in the body places the death-sign on the red corpuscles and the spleen obeys the command. The hypertrophy of the spleen under these circumstances is possibly to be looked upon as a work-hypertrophy. Certain it is that the removal of the spleen in hæmolytic jaundice institutes most marvellous improvement and speedy cure. The jaundice, which may have existed for years, or possibly for life, entirely disappears within a few days, and the anæmia, which is of the secondary type, disappears within two or three weeks.

Hæmolytic jaundice is of two types, the acquired type of Hayem and Widal, and the familial or congenital type of Minkowski. The former is the more serious, and usually leads to death. The latter may exist for years or for a lifetime, the patients maintaining a fair degree of health, although suffering at times from an exacerbation of slight permanent jaundice accompanied by tenderness in the region of the enlarged liver and spleen, headache, malaise, and moderately increased temperature. The acquired type of hæmolytic jaundice has probably been confused with biliary cirrhosis, and there are reasons to believe that many patients supposed to be suffering from the hypertrophic cirrhosis of Hanot, a disease lasting from six to ten years and most frequent in the adolescent period, in reality have hæmolytic jaundice. The enlarged spleen and liver of hæmolytic jaundice lends itself readily to such confusion. This confusion should no longer exist unless there are gall-stone complications, for in hæmolytic jaundice bile is found freely in the stool but not in the urine. Examination of the peripheral blood discloses an increased fragility of the red cells, and Schneider's [17] test of the duodenal contents removed through the duodenal tube shows urobilinogen and urobilin in excess. Unfortunately, however, gall-stones are very frequently present, perhaps because of an increased viscidity of the bile, and may give rise to colics, cholangeitis, biliary obstruction, &c.

The choice of time for splenectomy in hæmolytic jaundice is of importance. Of 13 cases we lost but one, this being a patient who was operated on during crisis. For our knowledge of hæmolytic jaundice we are greatly indebted to the work of Elliott and Kanavel.[18]

To sum up, it may be said that splenectomy is a curative measure in properly selected cases of splenic anæmia, hæmolytic jaundice, and allied states, and that it may be curative in certain as yet little understood conditions which are confused with pernicious anæmia, leukæmia, and cirrhosis of the liver. Splenectomy is of value in certain types of parasitic splenomegalia—notably, malaria and syphilis. It is of value for the palliation of some types of pernicious anæmia. In portal and biliary cirrhosis associated with splenomegalia splenectomy may have a field of usefulness, but there has not been sufficient experience with it in these conditions to furnish reliable data. In true leukæmia splenectomy does not appear to have standing, but in connexion with the use of radium it is at least to be considered.

The technique employed in the Clinic for splenectomy has been recently described by Balfour,[19] and it will not be necessary to lengthen this discussion by further reference to it.

In conclusion, I wish to emphasise the fact that traditional medicine has named many diseases from symptom complexes. Patients are more or less carefully observed, a few blood cells and a little plasma are examined at various times, the patients die and we assume that the condition found after death existed during life. The history of medicine is a graveyard of such beliefs. The spleen is one of the latest of the hidden organs to be brought under the eye and investigated during life and in the early stages of the disease. We find that the problems presented are not simple, but rather very complex. In the early stages splenic anæmia may be confused with pernicious anæmia, cirrhosis of the liver, hæmolytic jaundice, and leukæmia. We remove the spleen and say we have cured any one of the diseases we may have fixed upon to designate the condition, but does that make it true? Where is the dividing line between hæmolytic jaundice, Hanot's cirrhosis of the liver, and some types of pernicious anæmia? In the terminal stages we recognise the name of the end-results, but to determine the nature of the disease in the early and curable period requires investigation of the spleen, liver, bone marrow, and blood during life. To do this judicially, we must divest ourselves of accumulated prejudices which are the result of a nomenclature based on symptoms.

References.

1. Keith, A.: A New Theory of the Causation of Enterostasis, Cavendish lecture, THE LANCET, 1915, ii., 371-75.
2. Plummer, H. S.: The Function of the Thyroid, Normal and Abnormal, Tr. Assn. Amer. Physicians, 1916.
3. Kendall, E. C.: Studies of the Active Constituent, in Crystalline Form, of the Thyroid, Tr. Assn. Amer. Physicians, 1916.
4. Adami, J. G.: On Latent Infection and Subinfection and on the Etiology of Hæmachromatosis and Pernicious Anæmia, Jour. Amer. Med. Assn., 1899, xxxiii., 1509-14, 1572-76.
5. Eccles, R. G. The Tonal's and the Struggle for Existence, Med. Rec., 1915, lxxxviii., 47-56.
6. Vaughan, V. C.: Infection and Immunity, Commemoration Volume, Chic., Amer. Med. Assn., 1915, p. 164.
7. Rosenow, E. C.: Elective Localisation of Streptococci, Jour. Amer. Med. Assn., 1915, lxv., 1687-91. Elective Localisation of Bacteria in Diseases of the Nervous System, Ibid., 1916, lxvii., 662-65.
8. Jonnesco, T.: Splenectomie pour Hypertrophie Malarique, Bull. et Mém. Soc. de Chir. de Bucarest, 1901-2, iv., 58. Deux cas de Splénectomie pour Hypertrophie Malarique, Ibid., 64p.
9. Brill, N. E., and Mandelbaum, F. S.: Large-cell Splenomegaly (Gaucher's disease): a Clinical and Pathological Study, Am. Jour. Med. Sci., 1913, cxlvi., 863-83.
10. Harris, M. L., and Herzog, M.: Splenectomy in Splenic Anæmia or Primary Splenomegaly, Ann. Surg., 1901, xxxiv., 111-134.
11. Giffin, H. Z.: Splenectomy for Splenic Anæmia in Childhood and for the Splenic Anæmia of Infancy, Ann. Surg., 1915, lxii., 679-87.
12. Armstrong, G. E.: Personal communication.
13. Balfour, D. C.: Splenectomy for Repeated Gastro-intestinal Hemorrhages, Ann. Surg., 1916, lxiv.
14. Eppinger, H.: Zur Pathologie der Milzfunktion, Ber. Klin. Wchnschr., 1913, i, 1509-12, 1572-6, 2409-11.
15. Miller, J. L.: Splenectomy in Splenic Anemia, Hemolytic Icterus, and Hanot's Cirrhosis, Jour. Amer. Med. Assn., 1916, lxvii., 727-30.
16. Chauffard, A.: Pathogénie de l'Ictère Congénital de l'Adulte, Sem. Med., 1907, xxvii., 25-29; Les Ictères Hémolytiques, ibid., 1908, xxviii., 49-52; Cholélithiase Pigmentaire dans un cas d'Ictère Congénital Hémolytique; Analyse Chémique des Calculs, Bull. et Mém. Soc. Méd. d. Hôp. de Paris, 1912, xxxiv., 80. Widal, F.: Abrami, P., and Brule, M.: Différenciation de Plusieurs Types d'Ictères Hémolytiques, Presse Méd., 1907, xv., 641-44. Cited by Elliott and Kanavel, l.c.
17. Schneider, J. P.: The Splenic Pathology of Pernicious Anæmia and Allied Conditions, Arch. Int. Med., 1916, xvii., 32-41.
18. Elliott, C. A., and Kanavel, A. B.: Splenectomy for Hemolytic Icterus, Surg., Gynec., and Obst., 1915, xxi., 21-37.
19. Balfour, D. C.: Technic of Splenectomy, Surg., Gynec., and Obst., 1916, xxiii., 1-6.

PROPOSED SCHOOL OF MEDICINE FOR THE SUDAN.—Lord Cromer is promulgating an appeal issued by Sir F. Reginald Wingate, Governor-General of the Sudan, to found a permanent memorial to the late Lord Kitchener in Khartoum, and the form which is designated for the memorial will ensure the movement medical and scientific support. It has been decided that a school of medicine should be affiliated to the Wellcome Tropical Research Laboratories, and thus become part of the Gordon Memorial College. Students who have passed through that institution will therefore be fitted to serve as officers in the Egyptian Army Medical Corps, as officials in the medical department, and as general practitioners in that country. Lord Kitchener's association with the Anglo-Egyptian Sudan formed a most important section of his splendid career, and the appeal of the Sirdar should certainly secure sympathetic welcome. Subscriptions to the memorial should be forwarded to Mr. Baldwin S. Harvey, honorary secretary, Gordon Memorial College, 67, Lombard-street, London, E.C., and communications on the matter should be addressed to Mr. C. J. S. Thompson, honorary secretary, "Lord Kitchener Sudan Memorial," 54a, Wigmore-street, London, W.

An Address
ON
THE MEDICAL PROFESSION AND THE CAMPAIGN AGAINST VENEREAL DISEASE.

Delivered before the Hunterian Society on Nov. 22nd, 1916,

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MR. PRESIDENT AND GENTLEMEN,—Since the publication early this year of the Final Report of the Royal Commission, the campaign against venereal diseases has developed into a national movement of outstanding importance. The opening of the campaign has been in every way auspicious, but to bring it to a satisfactory issue—that is, to succeed in practically stamping out these diseases—is a task requiring the effective coöperation of many agencies and classes, particularly the wholehearted support of the medical profession. The object of this paper is to indicate the lines on which such support may be most advantageously given by the medical men in the various branches of the profession.

It may be well to begin by a brief sketch of the lines along which the campaign is to be pursued. Broadly speaking, the two chief objects to be attained are: (1) Education of the general public in the significance of the diseases, their racial and economic effects, the importance of thorough and early treatment, and the dangers of neglect; (2) the provision of wide facilities for the free diagnosis and treatment of the diseases by modern methods. In many quarters considerable criticism has been evoked by the decision of the Commission not to recommend compulsory notification at the present time. This question will be touched upon in another part of the paper.

EDUCATION.

It is quite obvious that provision of free treatment will fail to achieve its object unless the public are alive to the importance of seeking it at the earliest manifestations of disease. At the present time the subject is still, in many quarters, veiled in most undesirable mystery, as though there were something contaminating in the very mention of the words, "venereal," "gonorrhœa," and "syphilis." Could anything be more ridiculous and hypocritical than the attitude of many of the lower-class daily and weekly newspapers, which glory in detailed accounts of pornographic or sensational police-court cases, but cannot be prevailed upon to refer to venereal diseases, except by some catch-phrases like "hidden plague" or "social disease"? Medical men should take every opportunity of impressing on those responsible for the conduct of these papers the error of their ways and the importance of free ventilation and discussion of the subject, particularly in the papers having a wide circulation among the lower classes.

Another serious shortcoming of many of these papers is the wide hospitality offered by their columns to advertisements of quack medicines, including many obviously meant to attract sufferers from gonorrhœa and syphilis, advertisements productive of great profit to the papers and the quacks and of enormous harm to the unfortunate victims. I have strong hope that a serious effort will shortly be made to introduce legislation forbidding the advertising of any patent remedies for these diseases or their treatment by unqualified practitioners. Unfortunately, there are many strong vested interests opposed to such legislation, and every medical man should do all in his power to assist its passage by instructing any Members of Parliament he may know on its importance and by bringing before them cases he may come across of the evil results of quackery.

Many of the better-class papers, both dailies and weeklies, have opened their columns to free discussion of the subject. There are, however, still many important provincial centres where nothing of this sort has yet been done, and no opportunity should be lost by doctors in these centres of promoting and carrying on propaganda work of this nature.

A most important educational aspect in which the medical profession can render unique service is that of the adolescent. At the present time the vast majority of both sexes are left to find out the facts of sex hygiene and venereal disease in a casual way, often through most undesirable channels. A great deal can, and should, be done by schoolteachers in instruction of this sort, but it is my firm conviction that such teaching would be far more effective if undertaken by the family doctor. He should make a custom of introducing the subject to the parents, pointing out to them its importance. In the great majority of cases parents are averse from, and indeed often incapable of, tackling the question, and will gladly accept an offer from their medical attendant to talk the matter over sensibly and frankly with their children of suitable age. If this suggestion were widely adopted, there would be an end to those tragic episodes of boys and girls contracting venereal diseases in actual ignorance of their existence.

Though such instruction may be expected to enlighten the children of to-day and to-morrow, it has been painfully lacking in the past, with the result that a very large majority of the young men and women of the present have grown up in dark ignorance. The National Council for Combating Venereal Diseases, recognising this, is engaged in an attempt to repair this deficiency. In the case of young men, the fact that a very large proportion are now in the ranks of the Army affords an excellent opportunity for their instruction, and with the consent and assistance of the Army authorities, a large number of lectures have been given to troops on the subject of venereal diseases. Up to the present time, nearly 900,000 men have been addressed, but the work is hampered by the lack of sufficient lecturers. If any medical man feels able to help in this important work, the National Council will be pleased to hear from him.

Considerable progress has also been made in the enlightenment of young women by courses of lectures by medical women to women "social workers" in various towns, and in a few cases by similar lectures direct to the women employees of large business houses. It is hoped to extend this work more widely in the near future.

ORGANISATION OF TREATMENT.

Most medical men are, I assume, aware of the general outline of the Government scheme for giving effect to those recommendations of the Royal Commission dealing with the provision of facilities for the free diagnosis and treatment of venereal diseases. In July of this year the Local Government Board issued an "Emergency Order" that each borough and county council should proceed forthwith to draw up and submit to the Board for approval a scheme for the organisation of clinics for this purpose. As regards finance, 75 per cent. of the cost is to be borne by the Treasury and 25 per cent. by the local authority. It should be noted that the execution of an "Emergency Order" is not left to the discretion of the local authority: it is compulsory.

The principal requirements demanded of local schemes include: (*a*) Arrangements for enabling any practitioner in the given area to obtain at the cost of the council a report on any material he may submit from a patient suspected to be suffering from venereal disease. (*b*) Provision for the treatment at hospitals or other institutions of persons suffering from venereal disease. (*c*) Provision for the supply, under certain conditions, to medical practitioners of salvarsan or its substitutes.

It is suggested that, for any given area, the medical officer of health should, in consultation with the medical staff of the available hospitals and pathological laboratories, organise such a scheme. More recently, as the result of representations of the British Medical Association, the Local Government Board has suggested to the councils that the committee entrusted with the preparation of their scheme should avail itself of the advice of representatives of the local medical practitioners.

Establishment of Clinics.

An essential factor in the success of the scheme is the coöperation of the voluntary hospitals. It is imperative that the clinics should be, not separate institutions, but departments of hospitals, so as to avoid the stigma which would undoubtedly deter patients from using them. It is probable that, for various reasons, many hospital committees will hesitate about coöperating in this way. Some of them still

regard venereal disease as an unclean thing beyond the pale of their legitimate scope, while others are apprehensive lest the receipt of a Government grant should expose them to the danger of unwarrantable interference with their administration. On the latter point the Local Government Board Memorandum makes it clear that, subject to the fulfilment of certain conditions as to treatment and returns relating to cases treated, there will be no interference with the hospital administration. As regards the former point, its irrelevance is patent to anyone realising the extent to which hospital accommodation is taxed by the treatment of the later manifestations of the diseases, not to mention the frequency of "innocent" cases. It is essential, therefore, that in the case of such hospitals the medical staff should do all in their power to persuade the committee to fall into line by participation in the local scheme.

Assuming that the coöperation of the local hospitals and pathological laboratories has been duly obtained, the next difficulty will be the provision of a medical officer to the clinic, one with "a satisfactory experience in venereal diseases and knowledge of modern methods of diagnosis and treatment." At the present time, with so few men available, this question of staffing the clinics is indeed a perplexing one, and its solution will tax the ingenuity of those responsible. In the case of the large towns, particularly those with medical schools, the difficulty should not arise if the local specialists adopt a helpful attitude, but in other cases it may perhaps be necessary to utilise the services of a less expert practitioner until the termination of hostilities releases the large number of medical men who will have gained a wide experience in the modern methods of diagnosis and treatment.

The establishment of clinics, the organisation of treatment, and the education of the public form, however, only the first step in the campaign. There remains the problem of attracting to them the sufferers from these diseases. The various ways in which patients may utilise these facilities may be summed up as follows: (*a*) He (or she) may come direct of his own accord to the clinic. In certain circumstances—e.g., if he seems well able to afford to pay for treatment—he might be advised to go to a private doctor, but should he prefer to avail himself of the clinic's free treatment he is quite entitled to do so. (*b*) He may be referred to the clinic for treatment by his private or panel practitioner. (*c*) He may be brought to the clinic for consultation or for special treatment (e.g., salvarsan), his private practitioner retaining the general treatment of the case. (*d*) The practitioner may obtain reports on specimens or supplies of salvarsan, &c., without the patient having any direct dealing with the clinic.

The Position of the Doctor.

It is, of course, impossible at the present time to form any estimate as to the relative numbers of patients in these four groups. In the case of other diseases, it might be safely assumed that a very large proportion would in the first place seek advice from their own doctor, but the "moral stigma" in the case of venereal diseases may quite likely operate in the direction of impelling many of them to go straight to the clinic, particularly when it is realised that there will be no danger of any publicity. Experience alone will clear up this point, but what is quite obvious is the essential importance of the general practitioner availing himself of the existence of these clinics in the treatment of his venereal patients. Every practitioner, panel or otherwise, should make up his mind to utilise these clinics in the way that seems to him best for the patient's welfare. Which of the actual methods he may decide upon in any particular case will, no doubt, vary with his clinical experience of such cases, but so long as he is determined to utilise these facilities with no other guide than the patient's well-being the success of the scheme is assured.

It might seem unnecessary to dwell on the obvious duty of the doctor in this way were it not for previous examples of the pernicious influence of medical "politics" in obscuring the ethical judgment of some members of the profession. Even now, almost before a single local authority has evolved a settled scheme, one hears ominous rumours of difficulties with the local profession as to finance, the arrangements for the free supply of salvarsan, and so on. By all means let the profession see to it that there be no exploitation of their services, but let us avoid the humiliating spectacle of appearing to place finance rather than the national health in the forefront of our association with this campaign. It is quite possible that the provision of free treatment to all comers may entail a certain amount of financial sacrifice to practitioners. Should this prove so, it must be borne, though it is probable that a large proportion of those able to afford private treatment will prefer to have it.

Courses of Instruction.

There can be no question that in the past the public has suffered greatly through lack of proper facilities for treatment, both private and institutional. Largely through the mistaken attitude of the teaching hospitals, few doctors have had anything like adequate clinical training in venereal diseases, so that even the recently qualified are comparatively unversed in modern methods, while most of the older men have had no opportunity for post-graduate instruction. This applies not only to syphilis, but perhaps even more to gonorrhœa, which is still only too often treated by "expectant" methods instead of by the far more effective irrigation, &c., now in vogue in the Army and elsewhere. All this should soon be a thing of the past, and every practitioner should now have ample opportunity of bringing his knowledge up to date by attending the local clinic and by bringing his patients there for consultation. Those who can spare the time should seize the opportunity of attending as clinical assistants, and in that manner familiarising themselves with the details of diagnosis and treatment.

Mention may here be made of the admirable work now being carried out for the education of civil practitioners in this subject at the Rochester Row Military Hospital, London. With the sanction and encouragement of the Director-General of the Army Medical Service, Lieutenant-Colonel L. W. Harrison, R.A.M.C. is holding courses of instruction for panel and other practitioners, in the taking of specimens for examination, and other useful branches of the work. These demonstrations are held in the afternoons, the most suitable time for busy practitioners, and opportunity is given them of attending at other times for actual clinical work. No charge is made for these most useful courses, and I have Colonel Harrison's authority for saying that he will welcome the presence of any medical man, London or provincial, who cares to avail himself of the opportunity.

It is sincerely to be hoped that similar courses may be arranged by experts in large provincial towns at the earliest possible opportunity, so that the advent of the clinic may find men ready to take immediate advantage of its presence by sending to its laboratory suitably collected specimens for examination.

INSTRUCTION OF PATIENTS.

An important subject upon which I have not yet touched is the duty of the doctor to instruct his patients as to the infectivity of these diseases. The Commission recommends that "the obligation should be impressed upon all doctors who treat syphilis and gonorrhœa in institutions or privately to hand cards of instruction and warning to their patients. These cards should be in some such form as that given in the report, and should be provided at the public expense." The forms alluded to, which are to be found in pars. 121 and 123 of the Final Report, are as follows:—

Card for Syphilis.

1. Syphilis is a contagious disease; it can be cured if promptly treated by a doctor.
2. Treatment by quacks, herbalists, or persons advertising so-called nature cures is likely to lead to disastrous results.
3. The infection may last several years. It can be conveyed to others by sexual intercourse, by kissing, or by using the same eating or drinking utensils or tobacco pipes, &c.
4. Treatment should not be stopped until the doctor says this may be safely done.
5. Should signs or symptoms of the disease appear, such as rashes on the skin, sore throat, or symptoms of nervous disease, a doctor should at once be consulted.
6. A doctor should be consulted occasionally, even though there are no symptoms of a return of the disease.
7. Treatment need not, as a rule, interfere with work or necessitate stay in hospital.
8. No one who has, or has had, syphilis should marry without permission of the doctor; otherwise there is great danger of giving the disease to wife and children.
9. Teeth should be cleaned night and morning. The patient should dress warmly, live simply, and avoid wine, beer, spirits, and other intoxicants.

Card for Gonorrhœa.

1. Gonorrhœa is a contagious disease contracted through sexual intercourse. Gonorrhœa may be attended by grave consequences, especially if treatment is neglected and the necessary precautions are not taken.
2. Treatment by quacks, herbalists, or advertisers is likely to lead to disastrous results.

3. Sexual intercourse must on no account be indulged in while there is any discharge, even though this may be only slight. If this rule is neglected the condition is made worse. Moreover, there is always danger of communicating the disease.
4. Gleet, a late form of gonorrhœa, associated with a slight chronic discharge, is very likely to communicate the disease to the wife, causing much suffering and sometimes leading to caronic invalidism and barrenness.
5. Care must be taken that the discharge is not conveyed to the eyes. Neglect on this point may lead to injury to eyesight or to blindness.
6. Large quantities of simple fluids should be drunk, but no wine, beer, spirits, or other intoxicants should be taken while the discharge continues and for some considerable time after it has stopped.

The Local Government Board will undoubtedly undertake the provision of these cards, and no difficulty will exist as regards their distribution to "clinic" patients. As regards private patients, there is at present no legislative machinery for enforcing this recommendation, but there is no reason to doubt the willingness of the whole profession to accede to so reasonable a scheme. All that should be necessary would be for the Local Government Board to issue a supply of these cards to each practitioner.

THE QUESTION OF MARRIAGE.

A closely related question for the doctor is that of the marriage of patients of this class. Should his advice be asked on the matter, as often occurs, what should be his attitude? Everyone is, of course, agreed that marriage must be forbidden so long as the patient is at all infectious, but the real difficulty is to know at what stage the danger has ceased, or what criteria should be relied upon for settling the question. In the case of syphilis the importance of the problem is widely recognised, though differences of opinion exist as to when the infectious stage has passed, and the Commission's report is silent on this point. Dr. F. W. Mott informs me that he agrees with Fournier's dictum that permission may be given for marriage if four years have elapsed since the primary infection and the patient has been free from all symptoms for at least a year. It is impossible at the present time to dogmatise on the relation of the Wassermann blood reaction to infectivity. Just as a positive "von Pirquet" may be present in a case of quiescent tuberculosis, so it seems that a positive "Wassermann" may persist after all signs of active syphilis have disappeared. In exceptional cases, where vigorous early treatment has been pursued and secondary symptoms have been entirely absent, it is probable that a negative reaction might justify earlier marriage, but a longer experience with the newer methods is necessary for a proper elucidation of these details.

As regards gonorrhœa, the evidence of Mr. Frank Kidd, Colonel T. W. Gibbard, A.M.S., and others emphasised the difficulty of establishing the freedom from infection of such patients, owing to the tendency of the gonococcus to lie dormant in the urethral crypts, prostatic glands, &c., until again roused into activity by some indiscretion of the patient. On the question of marriage, Mr. Kidd (Appendix XXIV.) states that he decides this point in doubtful cases by a bacteriological examination of three samples of the contents of the seminal glands, obtained by prostatic massage. If no gonococci are found in these samples, he is satisfied that the patient is no longer infectious. I must confess to feeling some doubt as to this method ever becoming universally employed, but its adoption by such an expert emphasises the necessity for caution in pronouncing an opinion on this matter.

What should be the attitude of the doctor in a case where the patient refuses to follow the advice, and expresses a determination to marry in spite of still being infectious? Should he inform the responsible relative of the other party to the marriage? This raises the wider question of "professional secrecy" in relation to venereal disease—e.g., whether a husband's illness of this nature, if infectious, should be divulged to the wife, and vice versa. Every dictate of common-sense and humanity demands that the doctor should do all in his power to prevent the infection of the innocent, and no question of professional secrecy should be permitted to stand in the way if the patient's attitude renders this secrecy dangerous to others. It is true that at the present time a practitioner might render himself liable to an action for libel or slander by stating to a third person that anyone is suffering from a venereal disease. This objection is more theoretical than practical, as "proof of the truth of the defamatory words affords a complete defence" in a civil action against a medical practitioner, and it is therefore extremely unlikely that such an action would be entered by an "aggrieved" patient. There is not the slightest doubt, however, that a communication of this nature ought to be legally "privileged," and it is satisfactory to find that the Royal Commission makes the following recommendation on this point:—

> The law should be amended to provide that a communication made *bona fide* by a medical practitioner to a parent, guardian, or other person directly interested in the welfare of a woman, or man, and with the object of preventing or delaying marriage with a person who is in an infectious condition from a venereal disease, shall be a privileged communication.

As it stands, this is not wide enough, as it appears to limit privilege to communications made with a view to preventing marriage, whereas it should cover any communication intended to prevent the spread of infection. This would be attained by altering the phrase—"*and* with the object" to "*or* with the object." In all probability, legislation on these lines will soon be an accomplished fact, and then the way will be freed for every doctor to insist that no infectious patient of his shall spread these diseases to unsuspecting victims.

COMPULSORY NOTIFICATION.

In conclusion, a word on the subject of "compulsory notification," around which recently has raged a good deal of unfortunate controversy. Viewed in the abstract, there is no doubt in anyone's mind that such notification is an admirable adjunct to the fight against infectious diseases. In the particular case in point, however, there are two very weighty objections to its application *at the present time*—namely, lack of sufficient facilities for treatment and the prevalence of quackery.

As regards the first point, it is obvious that notification must be useless unless the cases so notified can be at once effectively treated. At the present moment this is out of the question; the machinery for the purpose simply does not exist. Every day, in my capacity of honorary secretary of the National Council for Combating Venereal Diseases, I receive letters from sufferers in various parts of the country asking where they can receive proper treatment. I refer them to the local doctor or hospital, as the case may be, but only too often with the feeling that their chance of satisfactory attention is slight.

As regards the second point, there is every reason to fear that, so long as quacks are allowed to flourish and advertise, compulsory notification would simply drive more victims than ever into their toils. Venereal diseases stand in a category apart by reason of the unfortunate stigma attaching to them, and also from the fact that the patient is in most cases not obviously ill and therefore not compelled to give up work. As a result compulsory notification would lead in many cases to neglect of all treatment and in many others to resort being had to quacks. When treatment-centres are in full working order, when quackery has been abolished by a beneficent legislature, and when the public has been adequately instructed in the terrible results of neglect, then may compulsory notification be fitly introduced as a powerful weapon in the fight against this scourge.

"OUR DAY" IN DEVON.—At the last meeting of the finance committee of the Devon branch of the Red Cross Society it was reported that the "Our Day" collection, which was recently held in Devonshire, would realise about £7000. This sum will be handed to the British Red Cross Society and the Order of St. John of Jerusalem.

CHADWICK PUBLIC LECTURE.—In his lecture on "Baby-saving for the Nation," delivered this week at the Central Library, Hampstead, Dr. J. T. C. Nash, medical officer of health for the county of Norfolk, dealt in detail on the causes of the declining birth-rate. He stated that the size of the family tends to vary inversely as the social status of the parents, and that whereas in 1881 upper- and middle-class reproduction practically equalled that of the unskilled and intermediate working class, it now amounted to only one-half. He instanced Hampstead's precipitous descent from a high to a low birth-rate, but noted the marked fall also amongst the largely agricultural population of Norfolk. Infant mortality was a product of many agents, personal and social, of which the most important single factor was the disuse of breast-feeding. Only a national concentration on the whole problem of infant-rearing would suffice to avert disaster.

ILLUSTRATIONS OF THE DIAGNOSTIC VALUE OF AGGLUTININ DETERMINATIONS IN INOCULATED INDIVIDUALS.

BY E. W. AINLEY WALKER, M.A., D.M. OXON.,
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(*A Report to the Medical Research Committee. From the Department of Pathology, Oxford.*)

IN the blood of individuals inoculated against typhoid fever there are present certain quantities of agglutinins for B. typhosus. The amount of these agglutinins is so remarkably diverse in different individuals, even when they have received identical doses of the one and same vaccine and are examined after the same lapse of time,[1] that it is quite impossible to arrive at any kind of figure which could be taken to represent their probable value in any given individual at any given interval after his inoculation. Accordingly it is impossible to decide on making a determination of agglutinin titre whether the agglutination observed is wholly the result of past inoculation, or whether it contains evidence of superadded active infection. Recognition of these facts a year and more ago led a number of experienced pathologists to declare that the Widal reaction failed to afford information of diagnostic value as regards typhoid infection in typhoid-inoculated individuals. Where there was danger that this fact might not be recognised so speedily, it was abundantly brought home by clinical experience of "the failure of the Widal test due to inoculation."[2]

Under these circumstances Dreyer, Ainley Walker, and Gibson[3] drew attention to the fact that in these inoculated individuals a diagnosis could still readily be made by means of the agglutinin reaction if the agglutination test were repeated several times at short intervals in order to ascertain whether the titre of agglutination showed marked changes affording evidence of an immunity reaction such as is known to accompany active infection. But for this purpose it was necessary to employ an accurately quantitative method of determination, and one whose results were always comparable *inter se*. It was therefore proposed to make use of the method published by Dreyer in 1906 (rendered more accessible to British pathologists in 1909[4]), which had for years proved eminently satisfactory, and was then (as it still remains to-day) the only published method which adequately fulfils all the requirements. And it was shown that where this method was used in the examination of individuals inoculated against typhoid fever the agglutinin reaction still afforded the simplest and the most reliable method of diagnosis in suspected cases of typhoid infection.

Now it is obvious that what could thus be done in regard to the diagnosis of typhoid fever in individuals inoculated against B. typhosus can also be done for paratyphoid A infection in persons inoculated against B. paratyphosus A and for paratyphoid B infection in persons inoculated against B. paratyphosus B, probably also for enteric infections (typhoid and paratyphoid), generally in persons inoculated against all three micro-organisms. Yet since the introduction of inoculation with triple vaccine (B. typhosus, B. paratyphosus A, and B. paratyphosus B) the old notion that the agglutinin reaction can no longer be employed as a ready diagnostic instrument shows a tendency to reassert itself. Unfortunately it even makes its reappearance under the protection of some pathologists who have had ample opportunity of seeing evidence to the contrary. This would be a matter of the less urgent importance were there alternative methods of diagnosis at disposal which offered a reasonably equal probability of success. The facts, however, are quite the reverse. Failing the agglutinin reaction, recourse must necessarily be had to methods of blood cultures and to cultivation from the stools and urine. And all these methods require not only extensive preparation and expenditure of material, but very considerable skill and experience. They are laborious, so that the worker can at best not handle more than a fraction of the number of cases that he could easily examine by agglutination tests. They are complicated and cannot invariably be carried out under active service conditions. Worse than all, even though repeated examinations are carried out, they very often fail entirely. The infecting micro-organism frequently refuses to be isolated, and evidence justifies the statement that *quite half* the cases will remain undetected where these methods are exclusively relied upon.

Now it is obvious that under present conditions no one would willingly or consciously assume the grave responsibility entailed in failure to detect cases of typhoid or paratyphoid fever which are capable of being readily detected. Yet this is what must necessarily occur, to the gross prejudice of general hygiene and efficiency, if only those cases of "enteric fever" are detected which yield a positive result by culture methods. On the other hand, the agglutination test, when suitably carried out and appropriately repeated, can be made to yield a uniformly accurate diagnosis in cases examined during active infection. It has been shown by Dreyer[3] and others to give correct results over long series of cases in which the diagnosis was rendered absolute by the successful cultivation of the infecting micro-organism from blood, stools, or urine. It may, therefore, safely be presumed also to give reliable results in cases where the infective agent itself has not been isolated and identified.

It has been suggested that needful assistance would be given to others in the interpretation of results obtained in such agglutination tests by the publication of a series of illustrative charts from actual cases with brief explanatory notes.

Notes and Illustrations.

In interpreting the results of agglutination tests attention is directed to the known form of the immunity curve of agglutinin production resulting from a natural (or artificial) infection. The general outline of such curves is now familiar. They were first traced by accurately quantitative methods in typhoid fever by Madsen and Jörgensen,[5] and subsequently with still greater certainty by Dreyer and Schroeder,[7] employing Dreyer's standardised agglutinable cultures. Similar curves were also given by Dreyer and Ainley Walker,[8] both for specific and for non-specific stimulation of agglutinin formation under experimental conditions.

A good example of an agglutinin curve is shown in Chart I. which is here reproduced from a previous article.[3] The broken line represents the course of agglutinin formation in a case of typhoid fever—the curve of immunity reaction for agglutinins—and set over against it in thick lines are observations on three cases occurring in typhoid inoculated individuals designated by the signs α, β, and γ respectively. The first two of these cases were cases of active paratyphoid B fever, the third case was "not enteric."

Before proceeding to the actual description of illustrative curves* it will be of advantage to collect together certain data on which diagnosis proceeds. Most of these data have already appeared in the Directions for Use of Standardised Agglutinable Cultures issued on behalf of the Medical Research Committee or have been published elsewhere by Dreyer and his co-workers. Their original statements have received additions and extensions from time to time as knowledge and experience have accumulated. Doubtless these statements may be subject to some further elaboration or to some qualification in the future, but the main outlines have been firmly established from an early date and have proved themselves to be reliable in the opinion of other workers.[9]

1. In *non-inoculated persons* who have never had enteric fever† agglutination in a dilution of 1 in 25 (1 in 10 paratyphoid A[5]) justifies a strong suspicion of active infection. But the test must be repeated in the course of a few days to ascertain whether there is any change in the titre of agglutination. Marked agglutination in dilution of 1 in 50 or more is (nearly always) diagnostic of active infection. A non-inoculated "carrier," in whom infection is inactive, will normally show no important change in the titre of his serum on repeated examination at short intervals.

2. *Inoculated persons*, if quite recently inoculated, will usually show a high titre of specific agglutination. The curve in Chart 1, from a case of typhoid fever, serves equally well to show the general *form* of the curve of agglutinin

* Detailed agglutinin curves for enteric fevers in inoculated individuals were first worked out by Dreyer a year or more ago from daily observations in a number of patients. But the data were unfortunately in great part destroyed by fire.

† Here and elsewhere the term *enteric* fever includes both typhoid and paratyphoid infection.

formation following inoculation. A rapid rise in titre (for each bacillus in the case of triple vaccine) sets in within a few days of inoculation. A maximum is reached, followed by a fall at first rapid, but subsequently becoming very slow, so that a relatively high titre may be maintained for a long period (even for years). During this period examinations made at intervals of a few days give practically identical readings.

3. When an *inoculated individual* suffers from an attack of enteric fever his titre of agglutination for the bacillus concerned (typhosus, paratyphosus A, or paratyphosus B) will exhibit the usual rise and subsequent regular fall seen in non-inoculated subjects (Chart 1), but starting from and returning towards the higher base line of inoculated persons. Meanwhile one of three things may occur as regards the agglutinin titres of his serum for other members of the group against which he has been protectively inoculated:—

(*a*) No appreciable rise may occur in the titres.

(*b*) A relatively slight rise may occur, followed by a fall towards their former level.

(*c*) A marked rise may occur *approximately synchronous with or somewhat antecedent to* the rise in agglutinin titre for the infecting bacillus, and subsequently followed by the usual fall.

In this connexion it is useful to note that paratyphoid B infection is particularly often found to be the occasion of a marked rise in the typhoid agglutinins. Further, such a rise in the typhoid agglutinins is often—especially in persons inoculated only against B typhosus—the first evidence presented of what subsequently proves to be paratyphoid B (or paratyphoid A) infection.

Rises of this kind in the agglutinin titre of the serum for organisms other than the infecting agent have been attributed to the production of so-called co-agglutinins. But without entering on a discussion of the true meaning of "co-agglutination," it may be stated that when standardised agglutinable cultures are employed experience proves that notable co-agglutination is not met with in the enteric group. And these subsidiary rises in agglutinin titre are almost certainly to be explained as due to a re-stimulation by infection with a closely allied organism of the mechanisms already trained by inoculation to produce particular series of agglutinins.

Similar rises in agglutinin titre can be produced in immunised animals by the introduction of wholly heterologous bacteria.[8] But to what precise degree the same fact may apply to the effect of pyrexial attacks occurring in inoculated human subjects from causes other than enteric infections we do not at present know with certainty. Accordingly a diagnosis of typhoid or paratyphoid fever should not be based on a rise in titre of only 100 or 200 per cent., if it is clear that the maximum of that rise falls markedly outside the period of expectation for enteric fever[10] (see 4, below). Yet it must be stated that the rises in enteric agglutinin titre so far met with in association with other febrile conditions very rarely amount to as much as 100 per cent., and are much more frequently either altogether absent, or so small as to be practically negligible.

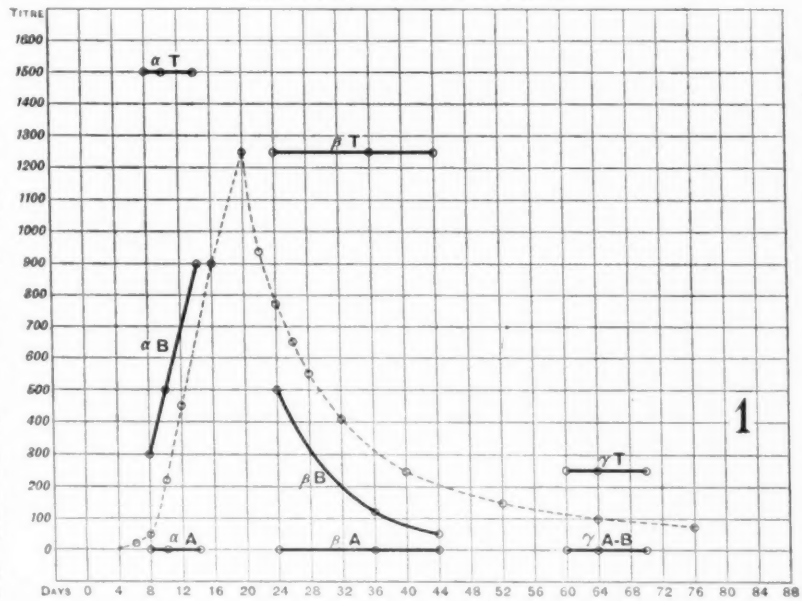
4. The maximum of the curve of specific agglutinin formation accompanying enteric infection in man occurs between the sixteenth and the twenty-fourth day of the disease, and most frequently from the eighteenth to the twentieth day. And, so far as experience at present goes, a change of titre of even only 100 or 200 per cent., proceeding regularly in the usual curve, and passing its maximum within the period named, justifies a diagnosis of enteric fever.[10] It will, of course, most commonly be found that the maximum has occurred in the interval between two successive observations.

5. In the case of mixed infections with enteric group bacilli (typhoid and paratyphoid), whether in inoculated or non-inoculated persons, the agglutinin curves for the different infecting organisms pursue their course independently of each other. They are therefore usually not synchronous, though they may be so.

Readings.—In reading the agglutination tubes put up with different dilutions of serum what is looked for first is a tube exhibiting standard agglutination—that is, marked agglutination (naked-eye) without sedimentation (Dreyer); and the reading proceeds as described in the Directions for the Use of Standardised Agglutinable Cultures issued on behalf of the Medical Research Committee. Such readings give results entirely adequate for diagnostic purposes, if from three to five successive observations be carried out at intervals of from three to five days. Should a more precise determination of the limits of agglutination be required, as in experimental work or for the purpose of obtaining smooth and accurate curves, it can be obtained by reducing the intervals between the successive dilutions of the serum as described in the "Directions," or by attaching appropriately calculated values to various degrees of agglutination recognisable as increasingly greater and increasingly less respectively than standard agglutination. Thus Dreyer has shown that naked-eye differences in agglutination, ranging on each side of standard agglutination from total agglutination on the one hand to nil on the other, can be recognised distinctly when the serum dilutions increase or diminish in successive tubes by about 13 per cent., starting from standard agglutination as the central point and ranging upwards and downwards.

CHART SHOWING COURSE OF AGGLUTINATION.

(From Dreyer, Ainley Walker, and Gibson.)



In the curves now to be described all the readings are expressed in standard agglutinin units (Dreyer) as defined in the "Directions," where the simple process of reducing an agglutination result observed in serum dilutions to standard agglutinin units per c.c. of serum is fully explained. The matter need not be described in detail here since the "Directions" are readily accessible in this country and have also been published in an article by W. C. Davison in the *Journal of the American Medical Association* (vol. lxvi. (1916), pp. 1297–1300). The tubes were read in the usual manner after two hours in the water-bath at 50° to 55° C., followed by 15 minutes at the room temperature. Following Dreyer's full method, they were always read again for control after 24 hours' standing at room temperature, by which time any possible "zones of inhibition" have ceased

to complicate the readings. The readings move on slightly in the 24 hours.

On each chart is given a table of the actual readings made. These readings are plotted out and curved dotted lines are drawn through the points thus obtained so as to indicate approximately the probable form of the agglutinin curve. Points between which a maximum is believed to lie are not joined, but the curve is there left open. Upon each chart is also entered the character of the protective inoculation which the patient had received (typhoid vaccine T., triple vaccine T.A.B.) and the diagnosis given by the agglutination tests is recorded. The letters T.A.B. stand throughout for typhoid, paratyphoid A, and paratyphoid B respectively.

Cases of Typhoid Fever.

Chart 2.—A case of typhoid fever in a T.-inoculated individual. The T. agglutinin titre rises to more than double in the first four days. At the third observation, when the titre is probably already falling rapidly, it is 200 per cent. above the first reading. Maximum between twenty-first and twenty-fourth day of disease. Reaction moderate, probably a mild attack. No "co-agglutination" for A or B accompanies the reaction. Clinically, irregular pyrexia, rising at intervals to between 102° and 103° F.†

Chart 3.—Typhoid fever in a T.A.B.-inoculated individual. The measured rise in T. agglutinin titre is five-fold (400 per cent.) within nine days; maximum between eighteenth and twenty-first day. The fall is to less than one-half in three days and to one-third in six days. From the readings in this case (as in Chart 2) we learn that the curve of rise is steeper than the curve of subsequent fall. The sympathetic rise and fall in A and B "inoculation" agglutinins are marked definite and approximately synchronous. Clinically, temperature high at first (103° F.); never above 99° after fifteenth day.

Chart 4.—Typhoid fever in a T.-inoculated individual. This case again illustrates the great relative steepness of the rise in its later part as the maximum (probably sixteenth or seventeenth day) is approached. Its chief interest is in the existence of A and B agglutination curves running side by side, their maximum being pretty clearly a little antecedent to the T. maximum. The patient came from the Mediterranean area and gave a long history of diarrhœa, fever, &c., before his removal to England as a convalescent. The present attack began three months later. His agglutination readings clearly show that he had suffered from mixed or consecutive A and B infection at some period previous to the present observations. Clinically, onset with shivering and headache. Three smart rises of temperature to 105°, 103·5°, and 102·5° F. respectively on the first, third, and fifth day of illness simulating tertian ague. No malarial parasites in the blood. From the fifth day onwards temperature subnormal and rising to normal.

Cases of Paratyphoid A Fever.

Chart 5.—Paratyphoid A fever in a T.-inoculated individual. Reaction mild, but A agglutination rises in five days from less than 2 units to over 27 units (about 14-fold), a rise, be it noted, of at least some 1300 per cent. The fall is fairly rapid, but nothing like so steep. No "co-agglutination" for B. Sympathetic rise of T. inoculation-agglutinins marked and apparently pretty nearly synchronous. Clinically, very mild illness, temperature not exceeding 99° F.

Chart 6.—Paratyphoid A fever in a T.A.B.-inoculated individual. Clinically jaundice, cholecystitis, severe and continued remittent and irregular pyrexia. The diagnosis paratyphoid A is obvious. The accompanying T. and B agglutination are shown on a large scale. They present points of interest and deserve examination.

Cases of Paratyphoid B Fever.

Chart 7.—Paratyphoid B fever in a T.-inoculated individual. This case is one already quoted (from Dreyer and Torrens) in a previous article.[9] The B agglutinins increase nineteenfold in eight days. Maximum between the eighteenth and twenty-second day. The rise in T. inoculation-agglutinins is marked and approximately synchronous. No co-agglutination of A.

Chart 8.—Paratyphoid B fever in a T.-inoculated individual. A mild reaction, but the rise in B agglutinins is at least nineteenfold. Maximum nineteenth or twentieth day of the disease. Maximum of sympathetic T. inoculation-agglutinin rise probably antecedent. No co-agglutination of A. Clinically, diarrhœa and indisposition. The temperature never reached 100° F., and only three times exceeded 99° (evenings of seventeenth, eighteenth, and nineteenth days).

Late Cases.

Many cases do not come under observation here until late in the disease. These are often somewhat difficult to interpret, particularly when the day of onset is unknown, as is frequently the case, for example, in wounded subjects suffering from sepsis and pyrexia.

Chart 9.—Paratyphoid A fever in a T.A.B.-inoculated wounded individual. Observations begin late in the attack, but the T.A.B. agglutinin curves all indicate the existence of active reaction. The differential diagnosis rests on the fact that in the case of A the maximum has occurred later, and the amplitude of the reaction appears to have been greater than in the case of T. and B. agglutinins.

Chart 10.—Paratyphoid B fever in a T.A.B.-inoculated individual wounded 43 days before the first day of observation. The B agglutinins fall steeply to one-third in three days and to about one-fifth after six days. T. and A agglutinins fall relatively slowly. Clearly a case of paratyphoid B infection.

Mixed and Consecutive Enteric Infections.

Chart 11.—Mixed infection; paratyphoid A and B. Clinical condition, "trench fever." Moderate pyrexia, temperature falling to subnormal and normal on and after twentieth day of illness. Agglutinin titre for A rises eightfold in three days, that for B nearly sevenfold, both thereafter falling to less than one twenty-fourth of the higher reading in the next five days. Agglutinin titre for T. shows only a slight sympathetic rise; maximum antecedent to that of A and B agglutinins.

Chart 12.—Consecutive infection; paratyphoid B succeeding typhoid fever. The temperature fell (from 102° F.) to subnormal on the first day of observation. It rose again on the sixth day, becoming subnormal again on the tenth day. The agglutinin chart also shows that we are dealing with two independent reactions: first, the later part of a B. typhosus infection; and, secondly, a B infection in which the B agglutinins rise 300 per cent. at the second reading with an accompanying sympathetic rise in A agglutinins. Judging by the speed with which the T. curve becomes flat the fall in T. agglutinins is distinctly checked by the B reaction.

Chart 13.—Looks a little complicated. The day of disease is reckoned from the day on which the patient was wounded. He had long-continued very irregular, remittent, and intermittent pyrexia. The first stage of the illness is clearly paratyphoid A fever. The A agglutinins first rise, and then fall from the second observation to one-fifth in the course of eight days. The T. and B agglutinins move only moderately in sympathy. But on the twenty-sixth day of disease it is noted that instead of continuing their normal fall T. and B agglutinins begin to rise again, followed then or later on by the A agglutinins. Something new is evidently happening. Owing to the extreme gravity of the illness and accompanying delirium no further blood specimen was received until the fortieth day. B agglutinins were then found to have undergone a marked rise of about 135 per cent., and thereafter fell sharply to less than one-seventh of the highest observed value. The rise in A agglutinins was apparently *less* than on the former occasion, and its second maximum, like that of the T. agglutinins, preceded the maximum of B. agglutinins. The later part of the curves therefore indicates a paratyphoid B infection following the original paratyphoid A.

Pyrexia "not Enteric."

Chart 14.—Three cases of pyrexia, with a rise and fall in T. agglutinins, diagnosed as *not enteric*. The recorded change in titre is less than 100 per cent. in each case, and the maximum falls in each case before (though not always very long before) the sixteenth day as judged from the form of the curves. Two of these cases, (*a*) and (*c*), are typical of those which cause the greatest difficulty in serum diagnosis. They are recorded as being the most marked of their kind that I personally have yet met with. On their charts as they stand opinion might perhaps not unreasonably differ as to whether the diagnosis of enteric fever was properly excluded or not. In such cases, which fortunately do not seem to be of very frequent occurrence, all available collateral evidence, both clinical and pathological, may require to be taken into consideration. And it may be suggested that from the hygienic standpoint a case that remains persistently in doubt had better be regarded as potentially enteric.

Chart 15.—Four examples of the more usual findings in febrile conditions other than enteric fevers. Here the diagnosis "not enteric" is obvious.

The evidence brought forward in the charts which have now been described shows plainly that when standardised agglutinable cultures are employed in successive quantitative determinations of the agglutinin titre of the serum little difficulty is to be apprehended in the diagnosis and differentiation of the enteric fevers. In those cases which come under examination by Dreyer's method within two to three weeks of the onset of the disease no difficulty at all is likely to be met. But attention should be drawn to the fact that the majority of these cases here recorded (8 out of the 13)

† The pyrexia of enteric fever in inoculated persons is very often quite atypical, particularly in the mild attacks.

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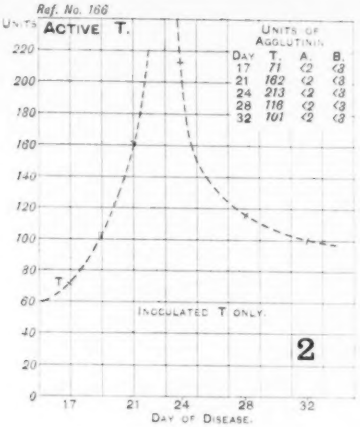

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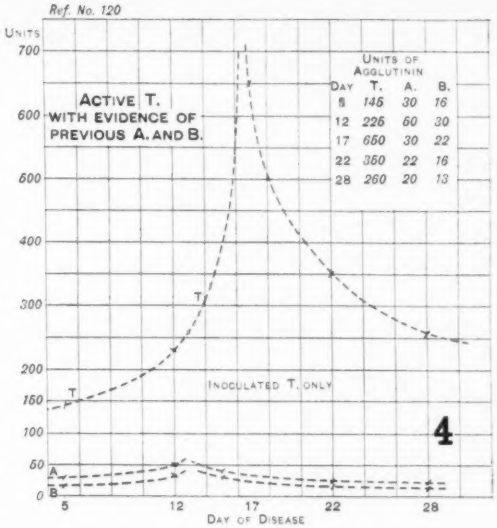

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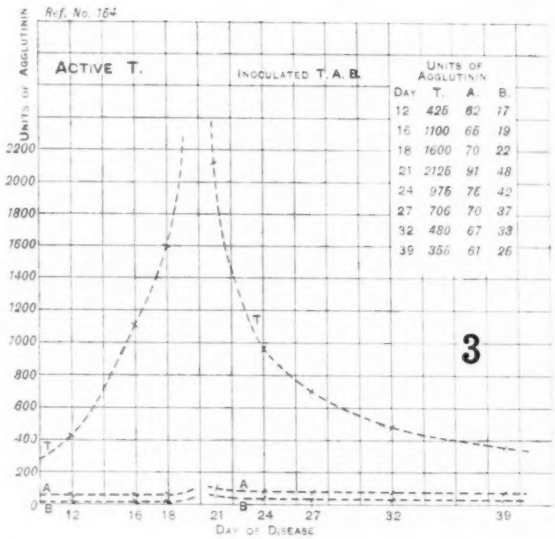

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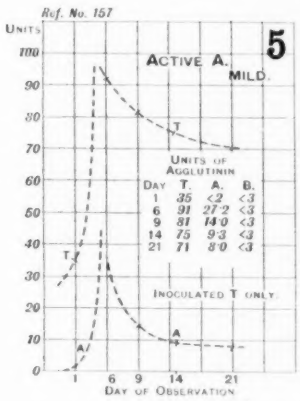

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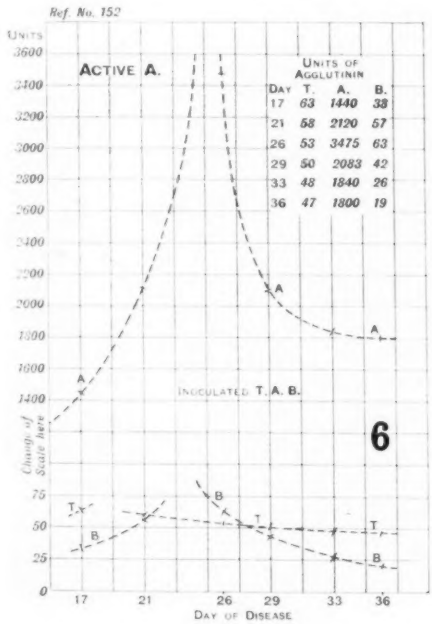

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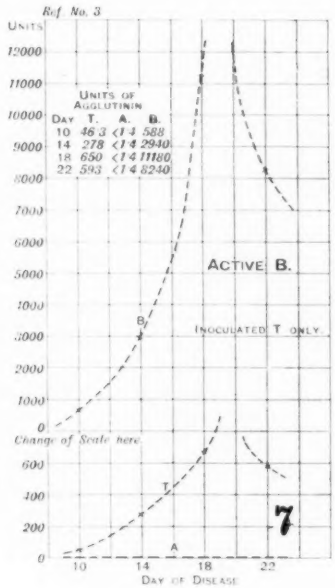

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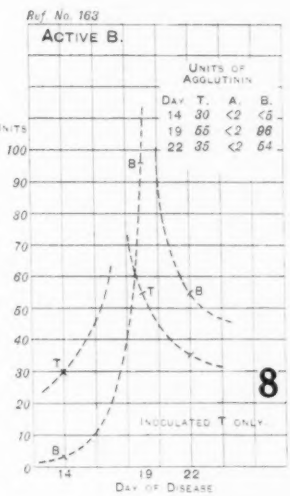
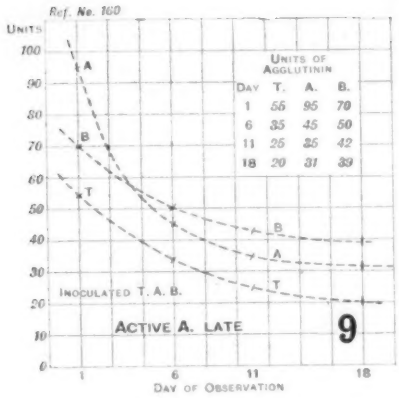
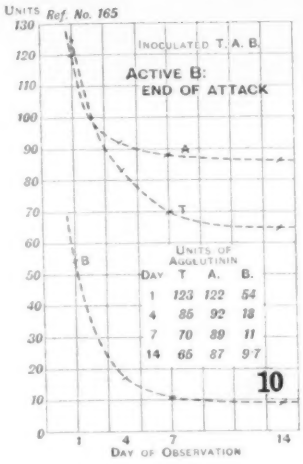



Ref. No. 160
UNITS
UNITS OF AGGLUTININ
DAY T. A. B.
1 55 95 70
6 35 45 50
11 25 25 42
18 20 31 39
INOCULATED T. A. B.
ACTIVE A. LATE
9
DAY OF OBSERVATION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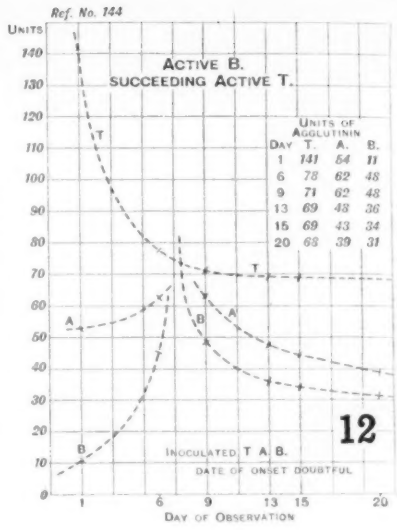
UNITS
INOCULATED T. A. B.
ACTIVE B: END OF ATTACK
UNITS OF AGGLUTININ
DAY T A. B.
1 123 122 54
4 85 92 18
7 70 89 11
14 65 87 9·7
10
DAY OF OBSERVATION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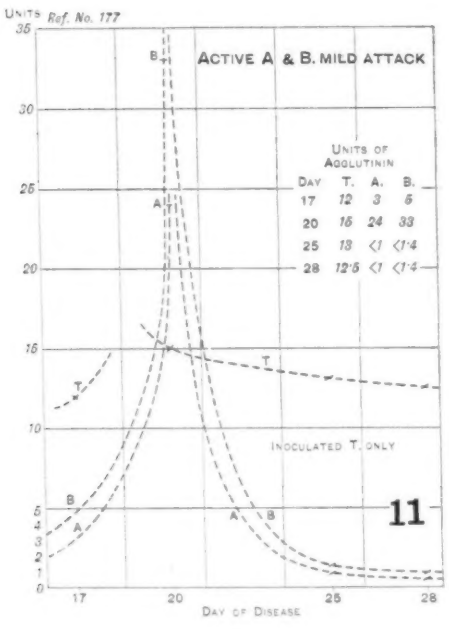
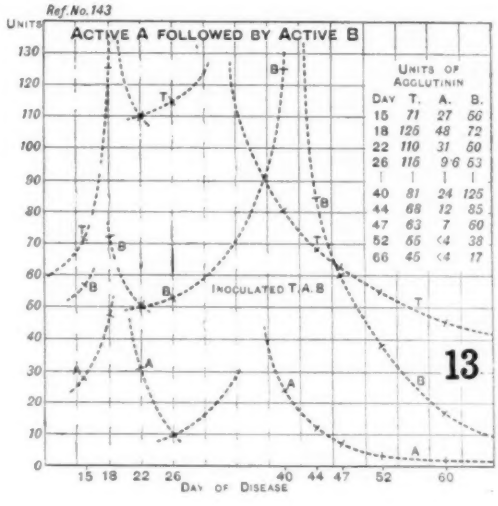
UNITS
ACTIVE B. SUCCEEDING ACTIVE T.
UNITS OF AGGLUTININ
DAY T. A. B.
1 141 54 11
6 78 62 48
9 71 62 48
13 69 48 36
15 69 43 34
20 68 39 31
INOCULATED T A B.
DATE OF ONSET DOUBTFUL
12
DAY OF OBSERVATION


Ref. No. 177
UNITS
ACTIVE A & B. MILD ATTACK
UNITS OF AGGLUTININ
DAY T. A. B.
17 12 3 5
20 16 24 33
25 13 <1 <1·4
28 12·5 <1 <1·4
INOCULATED T. ONLY
11
DAY OF DISEASE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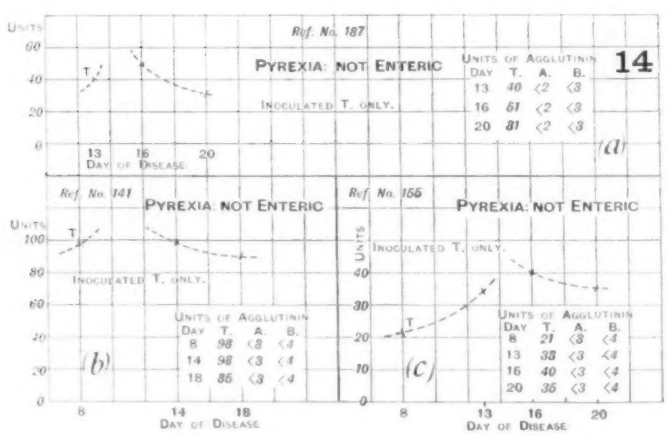
UNITS
ACTIVE A FOLLOWED BY ACTIVE B
UNITS OF AGGLUTININ
DAY T. A. B.
15 71 27 56
18 125 48 72
22 110 31 50
26 115 9·6 63
40 81 24 125
44 68 12 85
47 63 7 60
52 55 <4 38
66 45 <4 17
INOCULATED T. A. B
13
DAY OF DISEASE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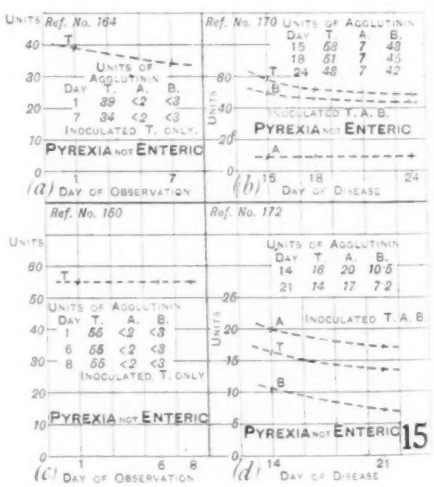
UNITS
PYREXIA: NOT ENTERIC
UNITS OF AGGLUTININ
DAY T. A. B.
13 40 <2 <3
16 51 <2 <3
20 81 <2 <3
INOCULATED T. ONLY.
14
(a)
DAY OF DISEASE
Ref. No. 141
PYREXIA: NOT ENTERIC
INOCULATED T. ONLY.
UNITS OF AGGLUTININ
DAY T. A. B.
8 98 <3 <4
14 98 <3 <4
18 86 <3 <4
(b)
Ref. No. 155
PYREXIA: NOT ENTERIC
INOCULATED T. ONLY.
UNITS OF AGGLUTININ
DAY T. A. B.
8 21 <3 <4
13 33 <3 <4
16 40 <3 <4
20 36 <3 <4
(c)
DAY OF DISEASE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UNITS
UNITS OF AGGLUTININ
DAY T. A. B.
1 89 <2 <3
7 34 <2 <3
INOCULATED T. ONLY.
PYREXIA NOT ENTERIC
(a)
DAY OF OBSERVATION
Ref. No. 170
UNITS OF AGGLUTININ
DAY T. A. B.
15 58 7 43
18 51 7 45
24 48 7 42
INOCULATED T. A. B.
PYREXIA NOT ENTERIC
(b)
DAY OF DISEASE
Ref. No. 160
UNITS
UNITS OF AGGLUTININ
DAY T. A. B.
1 55 <2 <3
6 55 <2 <3
8 55 <2 <3
INOCULATED T. ONLY
PYREXIA NOT ENTERIC
(c)
DAY OF OBSERVATION
Ref. No. 172
UNITS OF AGGLUTININ
DAY T. A. B.
14 16 20 10·5
21 14 17 7·2
INOCULATED T. A. B
PYREXIA NOT ENTERIC
15
(d)
DAY OF DISEASE

were what may fairly be spoken of as mild and atypical cases of enteric fever. For reasons already indicated elsewhere (Dreyer and Ainley Walker [10]) such cases are likely to occur with frequency under present conditions. It is, therefore, a matter of importance that this fact should be widely recognised, and that all doubtful febrile cases of whatever mildness should at an early period be submitted to agglutination tests before the possibility of enteric infection is excluded. If they are cases of enteric fever they will then be readily detected.

In a recent article, however, C. J. Martin and Upjohn conclude their communication with the statement that since the introduction of triple vaccine (typhoid, paratyphoid A, and paratyphoid B) in the inoculation of Australian units "the interpretation of observations upon the agglutination of enteric organisms will ..... be too difficult to possess any practical value, and the isolation of the infecting organisms must be resorted to for diagnosis." The difficulty in the opinion of the present writer lies rather in persuading some observers to employ methods which have any "practical value" in inoculated persons. And the suggestion that reliance should be placed on culture methods finds its answer not only in the fact that with the most perfect technique and organisation methods of cultivation from blood, stools, and urine fail in quite half the cases which come under observation; but also in the statement made by Martin and Upjohn themselves that it would not have been possible for them "to have made more than one-fifth the number of observations by blood culture, and at least half of these would have miscarried as so many of the patients were past the first week of the disease on admission."

References.—1. Dreyer and Inman: THE LANCET, July 31st, 1915. 2. Dawson, Sir Bertrand: THE LANCET, March 20th, 1915, p. 602. 3. Dreyer, Ainley Walker, and Gibson: THE LANCET, Feb. 13th, 1915, p. 324. 4. Dreyer: Journal of Pathology and Bacteriology, 1909, vol. xiii., p. 332. 5. Dreyer: Proc. Roy. Soc. Med., 1915, vol. ix. (Medical Section), p. 9. 6. Madsen and Jörgensen: Festskrift ved Indv. af Statens Seruminst., Copenhagen, 1902. 7. Schroeder, K, Thesis, Copenhagen, 1909. 8. Dreyer and Ainley Walker: Journal of Pathology and Bacteriology, 1909, vol. xiii., p. 343; vol. xiv., p. 39. 9. Glynn and Cronin Lowe: THE LANCET, Aug. 5th, 1916. 10. Dreyer and Ainley Walker: THE LANCET, Sept. 2nd, 1916.

A PRELIMINARY NOTE ON
PIECES OF CLOTHING EMBEDDED IN WAR WOUNDS.

BY R. J. WILLAN, M.V.O., M.S. DURH., F.R.C.S. ENG.,
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With a Note by Surgeon-General Sir W. WATSON CHEYNE, Bart., C.B., F.R.S., F.R.C.S. Eng.

I HAVE read with much interest Miss M. Davies's article in THE LANCET of Sept. 30th. For a considerable time I had been thinking over the question of the acute sepsis which is a sequel to the implantation of fragments of clothing in war wounds, and my interest was stimulated after the Jutland naval battle. Two lines of thought suggested themselves, viz., (1) that it would be a good thing if it could be known definitely if there was any foreign body, ordinarily non-transparent to X rays, in the wound; and (2) if the same foreign body could be treated with some antiseptic prior to its entry to the wound, and, if possible, that the same medium should be made to fulfil the two purposes.

Jutland Naval Battle Patients with Shell Wounds.

Twenty-six cases were received in my wards, which are classified under three groups: (*a*) patients with lacerated wounds which were aseptic, 15; (*b*) patients with lacerated wounds which were septic, 6; and (*c*) patients with both aseptic and septic wounds, 5. I regarded a wound as clinically aseptic when its lacerated margins were in a condition of dry gangrene, when it only required dressing once every two or three days, and when the patient's temperature and pulse-rate remained normal.

Of the above septic wounds either pieces of the wearer's clothing or boots were recovered from the wounds of 5 patients (i.e., 4 of Group *b* and 1 of Group *c*). A marked feature of each septic wound was the offensive smell. Twenty of the patients had wounds which were clinically aseptic, while 11 of the cases had wounds which were septic. As the wounded were received nearly two days after the action no systematic search under general anæsthesia for fragments of clothing was made. Those obtained appeared in the ordinary process of dressing the wounds; it is quite possible that the other septic wounds also harboured similar foreign bodies in their depths.

The above figures are a good testimonial to the work done by the surgical staffs of the warships before transference to the hospital ship. They further show what a factor ordinary clothing plays in a wound becoming septic. This clothing *must* be saturated with pyogenic organisms derived from the exterior, also exuded from the wearer's skin.

In the trenches simple sterilisation by heat is insufficient, because the sterile clothing would be so quickly contaminated by the soldier's surroundings. If, therefore, any good is to accrue, the garments must be impregnated with some antiseptic; this would inhibit bacterial growth should a fragment be carried deep into the tissues by a piece of shell. Further, this antiseptic might prevent the rapid breeding of vermin, which is so bitterly complained of at the "Front."

How can Clothing be made Opaque to X Rays?

Possibly this can be done by the recently described method of delineating the various internal soft tissues by X rays. It can be done by the manufacturer treating the clothing and underclothing with a preparation of the constituent of indelible marking-ink. The prescription of this I have tried is: Dissolve in 3 ounces of liq. ammon. fort. ½ oz. of nitrate of silver, and add ½ oz. gum arabic and ½ oz. archil. I did not soak the piece of cloth in the ink, but marked out on the cloth two groups of fine lines parallel to each other, the two groups being at right angles. It can be managed by periodically immersing the garments in some solution whose suspended particles are opaque to X rays. As it is obviously desirable that the sailors' and soldiers' garments now in use could be utilised, the experiments were made with a substance that could not only throw a shadow with X rays, but would also have some antiseptic properties.

How can Clothing be made Sterile?

During the Russo-Japanese War the Japanese made an effort in their Navy to deal with the question by trying to make their crews don clean garments prior to an action. During the present war, British naval surgeons have done good work in persuading their ships' crews to wear clean, or even sterilised, clothing when an engagement is imminent. To attain an aseptic ideal it would be necessary to have sterilised clothing always ready when the ship is at sea; further, that the action suit is accessible. To be really accessible provision must be made for each man's clothing to be stored at the action station itself, in order that he could quickly effect a change when necessary. But to enable an aseptic ideal to be attained the State must provide a complete change of clothing for each man, just as they provide him during hostilities with a suit of warm clothing for the winter. The suit would then be under the absolute control of the responsible person in the ship, who would see that it was always ready sterilised for use. This aseptic ideal could be carried out in the Navy, but it would be useless in the trenches, where clothing is so quickly contaminated by the surroundings.

In the Army the change of clothes could be kept at the bath house. On their way to the trenches the unit could change into their "trench clothes," and on their return from the trenches they could, after their bath, exchange into their other suits. After the "trench clothes" have been baked, washed, and dried, they can be immersed in the antiseptic solution, and after drying they will be ready for a further spell in the trenches.

Instead of having the antiseptic in solution, perhaps it may be possible to have some volatile chemical which, when placed in the steriliser or baking chamber, would volatilise with heating and impregnate the clothing.

Experimental Work.

My experiments aimed at trying to find a single substance to treat the "action clothes" which would satisfy the following requirements: (1) would make the garments (or fragments of same) impermeable to X rays; (2) would have some antiseptic properties; (3) would contain some antiseptic which was non-irritating to the *tissues;* (4) would contain some antiseptic which was non-irritating to the *skin.* I soaked

strips of flannelette in the following solutions respectively: pot. permanganate, 1:5000; hydrargyrum perchloridum, 1:1000; tinctura benzoin. co.; aqueous solution of borsal (equal parts of salicylic acid and boracic acid); and boracic acid, saturated solution. These strips were dried, laid in a row, and X rayed. The strip soaked in tinct. benzoin. co. showed the densest shadow, while that treated with the borsal was next best in density. As a medium similar to borsal seemed to be the easiest one to work with I decided to experiment with a modification of this. Salicylic acid by itself is not very soluble in water. If, however, borax be added it is readily soluble. The solution I used was: ℞ Boracic acid, gr. xv.; salicylic acid, gr. xv.; borax, gr. xxiv.; aq. ad ℥i. This solution is referred to hereafter as "B.S.B."

1. *To ascertain if B.S.B. is impermeable to X rays.*—I had a case of acute extravasation of urine with urethral stricture, the scrotum being the size of a child's head. Ten days after the perineal cystostomy I soaked a piece of sterile white gauze in B.S.B. solution and introduced it into the deep sinus. The scrotum (with the gauze packed in) was X rayed, when the shadow was easily distinguished.

2. *To ascertain if B.S.B. has antiseptic properties.*—The B.S.B. was made up as if it were an ordinary medicine—i.e., the dispenser made up the mixture with the ship's tap-water in an ordinary medicine bottle. *Nothing was sterilised.* Three tubes of agar were obtained, together with some pus from a septic wound which contained staphylococcus and streptococcus. The agar tubes were sown as follows: Tube *a* with 1 platinum loopful of pus only; Tube *b* with 1 platinum loopful of pus and 1 platinum loopful of the B.S.B. solution; and Tube *c* with 1 platinum loopful of the B.S.B. solution only. At the end of 48 hours' incubation the results to the naked eye were: Tube *a*, profuse growth; Tube *b*, growth, but nothing like so much as in Tube *a*; Tube *c*, no growth whatever. Therefore, subject to confirmation, it may be assumed that B.S.B. solution has some antiseptic properties.

3. *To ascertain if B.S.B. is non-irritating to the tissues.*—The piece of gauze soaked in B.S.B. solution, packed into the scrotal sinus, as mentioned previously, was allowed to remain for 24 hours, when it was removed. It caused no discomfort, there was no caustic effect, and I think it materially helped granulation.

4. *To ascertain if B.S.B. is non-irritating to the wearer's skin.*—I soaked a woollen undervest in the solution, and after it was dry I wore it continuously for five days. During this period I was perspiring profusely in a superheated theatre while operating. It produced no discomfort whatever, nor did any rash appear. The perspiration was absorbed from the undervest normally after I had ceased perspiring.

My reason for publishing such an incomplete note is the difficulty of doing experimental work on board ship, and it will be some considerable time before I can do anything further. To only see the sepsis following some of these dreadful shell injuries is quite sufficient to stimulate one to try to think of prophylactic measures.

The experiments detailed require confirmation; most probably other substances which will answer the required purpose better will be suggested. I am hoping that Surgeon-General Sir William Watson Cheyne will think the subject worth following up.

Note by Surgeon-General Sir W. WATSON CHEYNE.

I received a copy of the essential part of this paper from Staff-Surgeon Willan early last August, but was not at that time able to take up the question as he wished me to do. The suggestions are certainly most important ones, and even if only one of them could be realised in practice it would be a great help to surgical treatment. There is no doubt that the retention of pieces of dirty clothing in wounds is one of the most potent causes of severe sepsis, and the possibility of removing them early would be a great advance; this would be still more valuable if the opaque substance were itself antiseptic, or at least carried an antiseptic substance along with it into the cloth.

Since I heard from Staff-Surgeon Willan I have made many inquiries and have thought much about the subject, with the result that I came to the conclusion that a research by any one individual was not likely to be fruitful, as so many processes and sciences were involved; at any rate, I did not feel capable of carrying out such a research myself. Hence I placed Staff-Surgeon Willan's suggestions before the Board of Scientific Studies; and I learn that it was much interested, and will, I hope, reach some satisfactory conclusion.

THE TOXIC ACTION OF DILUTE PURE SODIUM CHLORIDE SOLUTIONS ON THE MENINGOCOCCUS.

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(*Report to the Medical Research Committee.*)

IN experimenting during the past season with a large number of freshly isolated strains of the meningococcus it was noticed that almost all of them were killed when placed for a short time in dilute pure sodium chloride solutions. The action of sodium chloride is most toxic to the meningococcus when the concentration of the salt is not below 0·85 per cent. and not much above 0·9 per cent. NaCl.

It was found that freshly isolated meningococci were more vulnerable than old laboratory cultures. While old laboratory cultures could sometimes resist the action of pure 0·85 per cent. NaCl for three or four hours, freshly isolated strains seldom resisted its action for more than 20 minutes.

It seemed remarkable that NaCl should be toxic for the meningococcus in that concentration to which this germ is accustomed in the fluids of the body. It is strange, moreover, it should be so sensitive to the action of sodium chloride, while at the same time it is able to resist for many hours the action of distilled water.

To demonstrate the toxic action of saline solution on the meningococcus, it is highly important to observe certain conditions in performing the experiment. It is essential, in the first place, that the NaCl used should be free from any impurity. In the second place, the meningococci must be added to such a quantity of the saline solution that any trace of salts brought over with them from the culture-medium will have no appreciable effect in antagonising the action of the NaCl. Thirdly, it is important that the saline is not unduly diluted below its proper toxic strength by the addition of too large a quantity of the emulsion containing the germs. In the fourth place, no agglutination of the germs into masses or clumps in the saline must be allowed. The saline is then unable to act on the germs in the interior of these clumps, so that all are killed. Care must be taken to shake up the germs thoroughly in the saline and avoid all clumping as much as possible.

I have found, as a general rule, from a large number of experiments that one or two drops of an emulsion (of 5000 million meningococci to the cubic centimetre in distilled water) is the proper quantity of emulsion to be added to 2 cubic centimetres of 0·85 per cent. saline to demonstrate the toxic action of pure NaCl effectively on the meningococcus.

The toxic action of a 0·85 per cent. NaCl solution on the meningococcus can be readily antagonised and rendered harmless by the addition of a trace of some bivalent salt such as $CaCl_2$, with or without the addition of a small quantity of KCl. This is clearly shown by the following experiment, which has been repeated many times.

A 24-hour culture of a recently isolated strain of meningococcus "Lake" was emulsified in distilled water, a fairly thick emulsion being prepared (about 5000 million cocci to the c.c.). Into four sterile test-tubes capable of being placed in a centrifuge the following solutions with 25 c.mm. of the meningococcus emulsion were placed as follows:—

(1.) 2 c.c. sterile 0·85% NaCl.
(2.) 2 ,, ,, 0·85% NaCl + 0·004 c.c. $\frac{M}{1}$ $CaCl_2$.
(3.) 2 ,, ,, 0·85% NaCl + 0·004 c.c. $\frac{M}{1}$ $CaCl_2$ + 0·01 c.c. $\frac{M}{1}$ KCl.
(4.) 2 ,, ,, distilled water.

Each tube was then thoroughly shaken to ensure thorough mixing of the solutions and the emulsion of cocci. They were put in the incubator at 37° C. for an hour and a quarter. They were then taken out and centrifuged hard for 15 minutes, and the deposit in each tube planted out separately in sterile fashion on a chocolate plate.[1] Fig. 1 shows the growth obtained on this plate after incubation for 24 hours at 37° C.

An examination of Fig. 1 shows that the meningococcus emulsion placed in the pure 0·85 per cent. NaCl—that is, the deposit from Tube (1) has failed to grow, and that this

[1] Crowe's "chocolate" or blood-trypagar-glucose medium.

quarter of the plate (marked I.) planted out with this deposit is quite free of colonies. The cocci have been killed by the saline. In the opposite quadrant of the plate to this (II.), which has received a similar quantity of emulsion in 0·85 per cent. NaCl with the addition of a trace of $CaCl_2$, a thick heavy growth of the meningococcus has taken place, covering the entire surface of this quarter of the plate. The $CaCl_2$ here has completely antagonised the toxic action of the NaCl. In Quadrant III., where the saline has received the same quantity of $CaCl_2$ as II., but also a little KCl, growth is still thicker (not very well shown in the photograph). In IV., where the germ was simply allowed to stand for an hour and a quarter in distilled water, growth is good, and the colonies cover closely the entire surface of this quarter of the plate.

This experiment clearly demonstrates the four following points:—

1. The toxic action of a pure 0·85 per cent. NaCl solution on the meningococcus.
2. The antagonistic action of a trace of $CaCl_2$ solution over the toxic action of the NaCl.
3. The accelerating action of KCl, when added to $CaCl_2$ in antagonising the toxic action of NaCl.
4. The relatively harmless action of distilled water on the meningococcus.

FIG. 1.

Photograph of the growth obtained on a plate of Crowe's chocolate medium after 24 hours incubation at 37° C., showing the toxic action of a pure 0·85 per cent. NaCl solution on the meningococcus and the antagonistic action of a trace of $CaCl_2$. I. Portion of plate planted out with emulsion of the meningococcus in 0·85 per cent. NaCl solution. No growth has taken place, all organisms being killed. II. Portion of plate planted out with a similar quantity of emulsion in 0·85 per cent. NaCl + a trace of $CaCl_2$; here the $CaCl_2$ has antagonised the toxic action of the NaCl, with a resulting thick growth of the meningococcus. III. Portion of plate planted out with a similar quantity of emulsion in 0·85 per cent NaCl + $CaCl_2$ + KCl, with a resulting thick heavy growth, more than in II. IV. Portion of plate planted out with a similar quantity of meningococcus emulsion which had been allowed to stand for an hour and a quarter in distilled water; good growth.

So definite is this toxic action of 0·85 per cent. NaCl solution on the meningococcus, that it was found possible to make use of it very successfully to destroy all meningococci outside or attached to the surface of leucocytes, by simply washing these several times and allowing them to stand for a few hours in a small bulk of pure saline.[2] There is no doubt that in this toxic action of dilute NaCl solution on the meningococcus we are dealing with the poisonous action of the $Na^{\cdot}$ ion, so extensively investigated by Loeb,[3] Wasteneys,[4] Osterhout,[5] and others.

It is interesting to find that in the case of the meningococcus, as these investigators have found for other forms of life, this toxic action of NaCl is confined to relatively dilute solutions. In the case of the meningococcus it is essential that the concentration of the NaCl should not be increased much beyond 0·9 per cent., as after this point its toxic action rapidly decreases. The use of a 1·5 per cent. NaCl solution (one of the standard strengths of this salt employed in opsonic work) is without almost any toxic action on the meningococcus, as shown by the following experiment.

FIG. 2.

Showing the toxic action of 0·85 per cent. NaCl solution on the meningococcus, in distinction to the relatively harmless action of a 1·5 per cent. solution of the same salt.

A fairly thick emulsion of a 24 hours' culture of meningococcus "Pryor" was made (about 5000 million cocci to the c.c.). To 4 c.c. of a pure 1·5 per cent. NaCl solution 25 c.mm. of this culture in distilled water was added and thoroughly mixed. To 4 c.c. of 0·85 per cent. NaCl solution a similar quantity of the same emulsion was added and mixed. The two solutions were placed in the incubator at 37° C. for an hour. They were then taken out and centrifuged and the deposit planted out separately on the surface of a chocolate plate, as shown in Fig 2. This figure shows the resulting growth obtained on this plate after

FIG. 3.

Showing the action of distilled water in failing to kill the meningococcus after 24 hours. D., Distilled water portion. N.S., 0·85 per cent. NaCl which has killed the germs.

24 hours incubation at 37° C. The 0·85 per cent. NaCl solution (marked N in the plate) has killed the meningococcus, while a good growth has been obtained on that half of the plate inoculated with a similar quantity of the same emulsion which had been exposed to the action of a 1·5 per cent. solution.

[2] See paper by Shearer and Crowe: The Rôle of the Phagocyte in Cerebro-spinal Meningitis, Proc. Roy. Soc., London. (To appear shortly.)

[3] Loeb: Collected Papers, Pt. 2, Univ. Chicago, 1906.

[4] Loeb and Wasteneys: Jr. Bio. Chem., vol. xxi., 1915.

[5] Osterhout: Zeit. f. physkl. Chem., vol. lxx., 1910.

I should like to draw attention, finally, to an experiment made to determine the length of time the meningococcus may remain alive in pure distilled water, as compared with 0·85 per cent. NaCl solution. Into 4 c.c. of distilled water, and 4 c.c. of 0·85 per cent. NaCl respectively, 25 c.mm. of a meningococcus emulsion was placed. The two solutions were then incubated for 24 hours at 37° C., centrifuged down for an hour and planted out separately on a chocolate plate. In Fig. 3 is shown the resulting growth on this plate after 24 hours at 37° C. The saline, as usual, has killed the germs; while a considerable number of those in the distilled water have survived and have given rise to a fair number of colonies. This experiment clearly demonstrates the power of the meningococcus to resist the action of distilled water.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Exhibition of Clinical Cases.

A MEETING of this section was held on Nov. 10th, Sir FREDERIC EVE, Vice-President, being in the chair.

Dr. F. PARKES WEBER showed a case of Thrombo-angiitis Obliterans (Non-syphilitic Arteritis Obliterans of Hebrews) affecting Three Limbs.

The man, aged 39, a Russian Jew, was the patient whose earlier history had been given in a paper on Thrombo-angiitis Obliterans.[1] In 1908, when he was aged 31, his right leg was amputated below the knee for commencing gangrene. The disease had commenced about two years previously, with pains in the right leg on walking of the usual "intermittent claudication" kind. There was the ordinary history of cigarette-smoking (15 to 20 cigarettes a day). Macroscopically the arteries of the amputated limb appeared to be rather hypoplastic, as had been observed in some other cases of the disease. The posterior tibial artery showed organised thrombus, containing pigment granules (? hæmosiderin). The upper part of the posterior tibial artery showed no thrombosis, but much narrowing of the lumen from a kind of endarteritis obliterans. The lumen of the lower part of the posterior tibial artery was likewise not obliterated. About the vasa vasorum surrounding it there was considerable cell-infiltration. One of the venæ comites of the middle part of the anterior tibial artery was obliterated by organised thrombus containing pigment granules (? hæmosiderin). About that time (1908) the patient seemed to have *true* psoriasis of the tongue, and simple cutaneous psoriasis of his trunk, limbs, and scalp still persisted. There was no evidence of disease in the thoracic or abdominal viscera. The brachial systolic blood pressure (in both arms) was about 130 mm. Hg. In July, 1912, owing to great and unyielding pain in the right stump, Dr. zum Busch amputated through the middle of the femur. In September, 1916, the patient was again admitted to hospital, having had for two years typical "intermittent claudication" on walking, in the calf-muscles of his remaining leg. For the last six months or so he had suffered from pain and tendency to cyanosis, of the "pseudo-erythromelalgia" type, in the foot. There was no pulsation in the left dorsalis pedis artery. The left radial pulse could not be felt, and the artery was doubtless obliterated. The patient had for some time been subject to temporary feelings of coldness in that hand. The brachial systolic blood pressure in the right arm was 125 mm. Hg. The Wassermann reaction was negative. The knee-jerk was present and the plantar reflex normal. He had not quite given up his old habit of cigarette-smoking. Since then, by rest in bed, &c., there had been some improvement in regard to the turgid, erythromelalgia-like, congestion of the foot, but he needed morphine injections for sleep at night. He sometimes seemed to obtain relief by letting the leg hang down over the edge of the bed so that the foot became congested and purplish.

Dr. WEBER also showed a case of Progressive Spinal Muscular Atrophy (Duchenne-Aran) following Electric Shock with Positive Wassermann Reaction.

The patient presented the appearance of great muscular atrophy of both upper extremities and of the muscles connected with the shoulder-girdle and thorax. There was great loss of power in the shoulders and arms. He could raise his left hand to his mouth, but could hardly raise his right hand. The wasting occurred first and was particularly noticeable in the intrinsic muscles of the hands. In both hands there was some contracture, more in the left than in the right. The atrophied muscles of the hands reacted very badly to electrical stimulation, the thenar muscles giving no definite reaction at all. His knee-jerks were exaggerated and, though he walked well, his gait was slightly spastic. There was no ankle clonus. The plantar reflexes were extensor. About March, 1910, he accidentally received a severe electric shock across the upper part of his body "from his left to his right hand" (750 volts, direct current). At first he seemed to suffer no ill-effects from it, but about 16 months afterwards he noticed that there was considerable wasting in his hands. The muscular atrophy slowly progressed until a few years ago.

There was no suspicion of any saturnism in the case and no history of syphilis could be obtained, but the Wassermann reaction had on two occasions been positive. The disease was clearly progressive spinal muscular atrophy. As usual, the patient was a male, of middle age when the first symptom was observed, and the hands were the first parts affected. Though he (Dr. Weber) had never heard of the disease following an electric shock, it was acknowledged to follow occasionally various kinds of traumata and shock, and he had been informed that in the present war it had been known to occur after "shell-shock." It was possible that a syphilitic taint occasionally acted as a predisposing cause by diminishing the resistance of the central nervous system.

Dr. WEBER also showed a case of Chorea Rhythmica in a man.

The patient, a man aged 38, had rhythmic movements of the neck and both arms which, under observation, became increased in rate, amplitude, and force. They quieted down somewhat when he was left to himself, and ceased altogether during sleep. Their rate was usually about 100 per minute. The movements became more violent when anyone tried to restrain them by force in any way or when the patient himself caught hold of a rail in endeavouring to walk. He said that he could not walk, but he could move his lower extremities when sitting or lying down. He gave one to understand that he could speak only in a very slow and broken (jerky) manner, as if battling against some obstruction in articulation. On the other hand, he could eat, drink, and dress himself fairly well when left alone without any assistance. He was not losing weight, and was apparently free from any visceral disease. His knee-jerks were exaggerated; no ankle clonus could be obtained; plantar reflexes were flexor. The speech difficulty commenced in December, 1915, and about February, 1916, he gradually became unable to walk. The chorea rhythmica apparently began about July, 1916.

Obviously, psychical factors played an important part in the case.

Mr. P. B. ROTH showed a case of Enlargement of the Lower Jaw (? Leontiasis Ossea).

The patient, a woman aged 56, was first seen in September of this year, complaining of pain in the lower jaw. She stated that in July she had several teeth out because of abscesses, and since then the gums seemed to have swollen. She complained at times of a shooting pain like a hot needle on the left side of her chin. Ten years ago, while carrying a heavy flower-pot in both arms, she stumbled, and fell with her chin against the pot. Her chin was badly bruised, and since then it had been getting larger. Examination showed a remarkable enlargement of the chin and lower jaw; the enlargement was more or less uniform, though the left side was rather more prominent than the right. All the lower teeth except a molar at the back had been removed. The alveolus was double or treble its normal size. A radiogram taken by Dr. W. Ironside Bruce showed a general enlargement of the horizontal ramus on each side.

Mr. ROTH also showed a case of Fracture of Both Patellæ in a woman. That on the right side was caused indirectly and had occurred recently; union had followed operation. The fracture of the left patella was due to direct injury. It took place eight years ago, the patient seeking no treatment but resting in bed for two months. It was a Y-shaped fracture, the patella being separated into an upper and outer and two lower and inner fragments. There was a gap of $2\frac{1}{2}$ inches and no sign of bony union. Although the quadriceps had been functionless for eight years there was no contraction of the hamstrings.

Dr. H. BATTY SHAW showed a case of Congenital Heart Disease.

The patient, a man aged 32, had from birth suffered from dyspnœa and cyanosis. A murmur corresponding to patency

[1] Quarterly Journal of Medicine, July, 1916 (ix., last paragraph on p. 296).

of the septum ventriculorum could be heard over the præcordium. The fingers and toes were clubbed. Although the characteristic periosteal changes and osteophytes of pulmonary hypertrophic osteo-arthropathy were absent, the bones of the forearms and legs were apparently thickened, and the fingers were broad and large.

It was suggested that in this condition the characteristic changes may disappear in time, the periosteal changes and osteophytes becoming merged into the somewhat denser bone of the shafts.

SECTION OF ANÆSTHETICS.

Heart Failure during Operation.—Composition of Air under Masks during Ether Anæsthesia.

A MEETING of this section was held on Nov. 3rd, Mr. GEORGE ROWELL, the President, being in the chair.

Mr. W. M. MOLLISON related a case of Heart Failure during an operation for the removal of tonsils and adenoids, heart massage through abdominal incision, and recovery. The patient, a boy aged 6 years, was subject to asthma, but otherwise was normal. The C E. mixture was taken from an open mask and light anæsthesia reached in an ordinary manner, after which the left tonsil was removed. There was slight struggling during the removal of the right tonsil, after which the boy was turned on to the left side and the adenoids were curetted; during this there was no movement. Immediately after it was obvious that the boy had collapsed, with dilated pupil, absent corneal reflex, and no respiration. After all local and general restorative means, artificial respiration, injection of pituitrin into the heart through the chest wall, &c., had failed, the abdomen was opened and a hand inserted between liver and diaphragm. The heart was easily felt and no trace of movement detected in it. It was massaged at the rate of about 90 pressures a minute. Respiratory movements began and continued intermittently; the colour improved and the pupils diminished. The heart, however, did not contract. Pituitrin (1 c.c.) was injected into the heart; massage was renewed, and after about 20 squeezes the heart began to beat strongly. The abdomen was closed and the patient was removed to bed, where saline was infused. After an hour he became restless with choreic movements of the limbs. For seven days he was more or less unconscious, with rigidity of limbs or choreic movements, a frequent shrill cry, and incontinence of fæces and of urine. At one time there were violence and tearing of the bed-clothes. There were, in fact, symptoms of severe cerebral irritation, due presumably to the damage done to the brain during the cessation of circulation. At the end of 14 days there was much improvement, and eventually the boy left the hospital well at the end of six weeks. Mr. Mollison gave a résumé of previously recorded similar cases, and concluded that probably heart massage should not be postponed longer than five minutes after apparent stoppage.

Dr. M. S. PEMBREY read a paper by Dr. F. G. SHIPWAY and himself upon the Composition of Air under Masks during Ether Anæsthesia. After recording the work of Dreser and that of Bryant and Henderson with Rovsing's bag, a series of figures obtained from observations under Schimmelbusch's mask and under Clover's inhaler with narrow and wide bores was given. Control observations with no anæsthetic gave, with the open mask, a range of 2·52 to 3·13 volumes per cent. of CO_2 and 17·94 to 17·06 oxygen, the lowest being 16·97. The closed methods showed much higher readings for CO_2 and considerably lower for oxygen. It was found that, apart from preliminary injections, four factors might affect the activity of the respiratory centre: the pressure of (1) ether, (2) carbon dioxide, (3) oxygen, and (4) the temperature. Anæsthesia depended upon a definite pressure or tension of ether in the blood and tissues, sudden variations above introducing the danger of overdosage, those below tending to too light a narcosis. Too much importance had been attributed to acapnia, and closed methods providing for a large percentage of CO_2 with rebreathing introduced the danger of too little oxygen. The respiratory centre could be overstimulated by the pressure of CO_2 and also by the effect of want of oxygen, whether produced by direct action or by acid products formed in the tissues. Sudden variations such as obtain with closed methods produce corresponding changes in the depth of narcosis and for the avoidance of reflex responses a deeper degree than is necessary is therefore maintained. Deeper breathing than is necessary means extra work thrown upon nervous, muscular and vascular systems and has the disadvantage in addition that larger quantities of ether are taken into the alveoli of the lungs.

The papers were discussed by the PRESIDENT, Dr. J. BLOMFIELD, Dr. Z. MENNELL, Dr. LL. POWELL, and Mr. ASHLEY S. DALY.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held at the West London Hospital on Nov. 3rd, Dr. E. Arthur Saunders, the President, being in the chair.—Mr. Aslett Baldwin showed a patient from whom he had removed Renal Calculi weighing 3¾ ounces. The affected kidney was not removed.—The remainder of the meeting was occupied by a demonstration of cases by the staff of the Hammersmith Military Orthopædic Hospital and Fulham Military Hospital. Mr. W. H. Trethowan: 1. Case of Dislocation of Semilunar Bone of the Right Wrist; treatment by removal through incision over the anterior annular ligament. 2. Case of Spiral Fracture of the Left Tibia treated by plating and plaster-of-Paris. 3. Fracture of the Right Tibia, ununited, with dropped foot and genu recurvatum; osteotomy of tibia; fragments plated and put in plaster-of-Paris.—Captain Naughton Dunn, R.A.M.C.: 1. Gunshot Wound causing Complete Musculo-spiral Paralysis; transplantation of tendons (*a*) of pronator radii teres into extensor carpi radialis longior and brevior; (*b*) palmaris longus into extensor longus pollicis; (*c*) flexor carpi radialis to extensor communis digitorum; and (*d*) flexor carpi ulnaris to extensor carpi ulnaris. 2. Gunshot Wound of Right Elbow; elbow-joint excised; treatment by movement and massage; result—limitation of elbow movement to 20° at 140°; treatment by Captain Dunn—elbow forcibly flexed to 45° under anæsthetic and collar and cuff applied. 3. Fracture of Left Elbow; treatment by fixation in acute flexion two months; now has ununited fracture of external condyle with free painless movement up to 170°.—Mr. D. McCrae Aitken also showed cases.—In addition a collection of Plaster Casts, Splints, and Oil Paintings representing cases were shown.—The cases were discussed by Mr. Baldwin, Dr. J. B. Mennell, Mr. Aitken, and Mr. O. L. Addison.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Nov. 9th, Dr. C. J. Macalister, the President, being in the chair.—Dr. J. H. Abram read a note on a case of Continued Fever. The pyrexia lasted many months in spite of the fact that the patient was otherwise in good health. Various possible diagnoses were discussed, but the high temperature with an infrequent pulse seemed to support a diagnosis of typhoid fever in spite of the absence of all the usual signs of the disease.—Dr. J. Murray Bligh read a note on Congenital Syphilis in a child aged 11 years. The family history, positive Wassermann reaction, and pathological findings seemed to indicate syphilis, and the question arose, How far one should allow oneself to be led by a positive Wassermann reaction in the absence of other usual and definite symptoms of the disease.—Dr. Llewellyn Morgan read a very complete and interesting paper on Dysentery. He discussed the modern theory of the causation of acute dysentery, amœbic and bacillary, and contrasted the pathological changes found in the colon in each variety. He discussed the treatment of amœbic cases with emetine, and considered that a trial of this drug should be made in all cases, and if no improvement took place in 48 hours a diagnosis of the bacillary form of the disease was the more probable. Of chronic dysentery four types were described: (1) the latent type; (2) the wet type; (3) the muco-purulent type; and (4) the hæmorrhagic type, and the symptoms and appropriate treatment of each were discussed. Emetine in the form of Alcresta Ipecac. was found to give excellent results in amœbic cases, and even in doses of 1½ grains given by the mouth caused no vomiting. In the diarrhœic type astringents were of little service. In the muco-purulent type rectal injections were suitable and normal saline seemed to give as good results as anything else. All injections were painful and were not tolerated in the hæmorrhagic type of the disease. Belladonna as an anodyne gave better results than morphia. In conclusion the military regulations which are in force to prevent the disease from becoming endemic in this country were described.—The paper was followed by a discussion, in which many members took part.

Reviews and Notices of Books.

The Sex Complex: A Study of the Relationship of the Internal Secretions to the Female Characteristics and Functions in Health and Disease.

By W. BLAIR BELL, B.S., M.D. Lond., Gynæcological Surgeon to the Royal Infirmary, Liverpool; Hunterian Professor, Royal College of Surgeons of England. London: Baillière, Tindall, and Cox. 1916. Pp. xx. + 233. Price 12*s.* 6*d.* net.

THIS is a really good book, the outcome of original work, careful study, and lucid thought devoted to his subject by its able author for well-nigh ten years. It will surely take high rank among the scientific works that medicine has given to the present century. In his previous writings and the Arris and Gale Lectures delivered by him in 1913 Dr. Blair Bell's object was to show that the reproductive functions are directed and controlled by all the organs of internal secretion acting in conjunction, rather than by the gonads alone, and that thus there exists a definite genital system. In his present preface he writes as follows: "There are, of course, still differences of opinion concerning the details; and it is for this reason, as well as because of the intense importance of the subject to physiology and to practical gynæcology, that the investigations and communications referred to, welded together, amplified, and largely rewritten, are submitted for consideration in book form in the hope that further interests may be stimulated, fresh facts noted and recorded, and existing opinions corrected or confirmed."

The author makes it quite clear in his preface and elsewhere in the book that the internal secretions are as closely connected with the male as with the female genital functions, and this seems to some extent to be implied in the chief title. But the book is mainly based on the author's special work on the genital system of woman, and for this reason, as well as because the word "complex" has lately been prominently employed in a very different "sexual" context by the so-called "psycho-analysts," it could be wished that it had been entitled in chief "The Genital System," thus representing more exactly and fitly the contents of the work and precluding any possible misconception of their nature at first glance.

In the first part, or about half of the work, the author deals with the morphological, physiological, and psychological aspects of his subject; while the second part treats of the pathological side of these questions. All through the book, which abounds with evidence, much of which is original, in support of the view that the internal secretions are largely concerned in producing and maintaining the feminine characteristics, and ensuring the full development of the genital organs, Dr. Blair Bell, while making proper use of the scientific imagination, adheres faithfully to scientific method. He draws his conclusions with caution, duly considering the worth of the facts adduced; not straining his inferences to include more than the facts may justly bear; and clearly recognising the difference between a merely probable inference therefrom, and a deduction which has been tested by further facts of observation or experiment. This just caution is seen not only when he is dealing with strictly so-called "physical" matters, but also in his critical handling of the psychological side of his subject, which, although less capable of being dealt with demonstratively, is nevertheless amenable to scientific treatment.

No abstract of the greater part of this work which deals with the anatomy and physiology of the subjects treated can be given within the space of this review: nor, indeed, is its matter, for all the clarity with which it is set forth, in any way capable of such condensation. The book must be studied from start to finish; and it will be read with ease and great interest by those who have any acquaintance with the classic work of Professor Starling. Suffice it to say here that the author gives separate and detailed accounts of the secretions of each of the endocritic organs, and of their correlations in regard to the genital functions; and that he follows a similar arrangement in considering the relation of pathological conditions of the internal secretions to the genital organs and their functions. Special attention, however, may be drawn to those parts of the book which concern the psychological characteristics, and the sexual and reproductive psychoses and neuroses in relation to physiological and pathological processes. For these sections are very weighty, in spite of the brevity that might cause them to be made light of. Dr. Blair Bell has evidently not written this part of his book, any more than the rest of it, without adequate knowledge and due reflection. He rightly says at the outset: "Completely to explain sex psychology we should, in the first place, be obliged to study the nature of psychical processes. This difficult task I shall not attempt ..... it is one which has for its primary basis either purely material or partly 'spiritual' conditions. By saying 'partly spiritual'—for want of a better term—as opposed to 'purely material,' I leave undecided the general aspects of the stormy disputation concerning the connexion of 'spirit' with matter; yet any views I shall put forward will not be affected—they are equally applicable whatever may be the opinion held concerning this question. I cannot, however, hope to accommodate those who assert that the mental functions are entirely spiritual. Without indulging in profitless discussion, I shall take it for granted that all engaged in biological pursuits, to whom my statements are addressed, hold the view that the psychical functions are partly or solely dependent on physiological processes, and it is on this belief that my own views are based. I shall, moreover, not enter into any discussion of what I have described as 'partly spiritual' factors, whether they exist in reality or not; I shall merely deal with the material factors which, it is certain, influence mental processes." These and some following remarks by Dr. Blair Bell recall the introductory words of the philosopher-physician Cabanis in his once well-known, but now neglected, "Rapports du Physique et du Moral de l'Homme," which he first read in the form of lectures before the Institut de France at the close of the eighteenth century; and it may be of some interest to note that Cabanis in this work gives certain indications of possible light to be thrown in future on the mental effects of then unrecognised physiological processes in internal organs.

In discussing the subject of feminine characteristics Dr. Blair Bell shows that he has no slight knowledge of it, and must be credited with thorough impartiality even by such as may decline to agree with him. In coming to the conclusion that woman's special psychological characteristics are undoubtedly bound up with her physiological nature he does not fail to emphasise strongly the fact that the individual is a tool of nature—a unit in a vast scheme. The "man is not superior to the woman in any possible sense of the word; his functions lie in one direction, the woman's in another, and each is the reproductive complement of the other."

We think that the author has achieved in this book something more than he indicates by the hope expressed in his preface. He has gone far towards establishing the fact of sex differentiation being largely dependent on the influence of the internal secretions in woman and in man as well. The work is not only very suggestive, but also of great positive value.

Defective Children.

Edited by T. N. KELYNACK, M.D. Vict. London: John Bale, Sons, and Danielsson, Limited. 1915. Pp. 462. Price 7*s.* 6*d.*

To this symposium in honour of the defective child many well-known authorities have contributed valuable articles. Among the more important of these are the chapters on defects of vision, speech defects, the deaf child, cardio-vascular defects, and defective growth. In separate chapters the various aspects of mental defect, physical deformities, and crime are suitably dealt with, while the State and municipal efforts made in different countries to cope with the practical difficulties of treatment are described in a series of seven useful chapters. In this very full and complete account of the defective child we notice only one omission of practical importance, and that is in connexion with those extremely difficult borderland cases which are so commonly met with in the families of intellectuals and which are sources of so much anxiety to educational as well as medical authorities. The case of these unhappy children is incidentally referred to in many chapters, as, for instance, in that general account of the mentally

defective child by Dr. Hamilton C. Marr and in that on the criminal child by Dr. William C. Sullivan, but the importance of the subject appears to us to demand more preferential consideration. In the opening chapter Dr. E. W. Hope contributes a very valuable article on the relations of the public services to the treatment of defective children. The wide experience of the author of this article in connexion with the practical solution of the problem involved entitles his contribution to the most respectful consideration. In Liverpool, where he exercises jurisdiction as medical officer of health and chief medical officer to the Education Committee, much pioneer work has already been done in municipal organisation generally, and more particularly with respect to those branches of the public service which are concerned with the medical supervision of young children up to the end of school age. In London, where the medical inspection of school children has now reached a really high standard of development, it is unfortunate that there is practically no correlation with the equally important supervision of the child under school age. The last-named work has been undertaken in particular instances by voluntary organisations, and the recent circular of the Local Government Board (Maternity and Child Welfare) empowers local authorities to undertake schemes for co-ordinating this work. In London there arises the difficulty that the circular does not provide for correlating the work already done by the London County Council with that of the local authorities—viz., the public health authorities of the component boroughs. The whole question of the organisation of our available resources for dealing with the problems of the State control of the defective child deserves even fuller consideration than Dr. Hope has meted out to it in his introductory chapter. Dr. Kelynack deserves the thanks of all those interested in the subject of the defective child for bringing much valuable information into an available form for the general as well as the special reader.

JOURNALS.

Journal of Anatomy and Physiology. Conducted by Professor ALEX. MACALISTER, Professor ARTHUR THOMSON, Professor ARTHUR KEITH, and Professor ARTHUR ROBINSON. Vol. L. Third Series, Vol XI., Part 4. July, 1916. London: Charles Griffin and Co. Annual subscription, 21*s.* post free.—This, the final part of the fiftieth volume of the journal, cannot be described as a particularly interesting number, since so much of it is devoted to the recording of isolated anomalies. Mr. F. A. Hepworth describes an unusual peritoneal sac which, lying upon the left side of the abdominal cavity, contained the bulk of the coils of small intestine.—Dr. Martin R. Chase records a case of congenital deficiency of the pericardium which affected the left side of the parietal portion of the pericardium.—Dr. Edward Reynolds gives details of three cases of reappearance of ovarian peritoneal sacculation in the human female, such cases being in some respects reversions to the primitive condition of a well-developed bursa ovarica.—Captain John T. Morrison, R.A.M.C., contributes a short illustrated account of a palmaris longus muscle with a reversed belly, forming an accessory flexor muscle of the little finger.—Dr. James F. Gemmill and Mr. James Stewart illustrate and describe a case of omphalopagous twins in the human subject. The visceral conditions in these twins are of considerable interest and are well illustrated. The figure of the external appearance of the specimen is not so satisfactory and it is strangely reminiscent of a sixteenth century woodcut.—Two papers of a rather wider interest are those by Dr. Jose Martins Barbosa on the structure of the lung of *Delphinus delphis* and Dr. H. Leighton Kesteven on the relation of the amphibian parasphenoids.—The issue contains the index of Vol. L.

Indian Journal of Medical Research. Vol. IV., No. 1.—The first of th 13 articles in this number of the *Journal* is by Major D. McCay, I.M.S., professor of physiology in the Calcutta Medical College, in conjunction with three other collaborators—namely, Assistant Surgeons Rai Bahadur S. C. Banerjee, Assistant Professor, Lal Mohan Ghosal, and Madan Mohan Dutta, demonstrators in the physiological department of the Medical College. It is entitled "Observations on the Sugar of the Blood and the Sugar in the Urine in Varying Conditions of Health in the Bengali." The observations were made in the course of an inquiry into the causes of the prevalence of diabetes in India under the direction of the Scientific Advisory Board and at the expense of the Indian Research Fund Association. It appears that the Bengali, even when not luxuriously fed, owing to the highly carbonaceous diet on which he lives, reveals a higher sugar content of the blood than the European, that this excessive sugar floating in the blood, so long as ordinary health conditions obtain as regards absorption, assimilation, and oxidation, gradually leads to a deposition of fat unless the extra sugar of the blood be got rid of by means of ordinary physiological activities of the body, muscular exercise, body-heat, and so on. As the energetic youthful period of life passes increase occurs in the percentage of sugar of the blood, and further storage of fat follows. This goes on until a time comes when the hyperglycæmia becomes so marked that the threshold stimulus for the kidneys is passed and these organs begin to excrete sugar to such an extent that even the ordinary clinical tests for glycosuria are obtained. To make matters worse, not infrequently "the sugar-sodden system of the successful survivor in the struggle of life gives his remaining powers of carbohydrate utilisation a knock-out blow by the consumption of large quantities of sweetmeats." Among the poorer working-class of Bengalis, energetic and lean, the administration of relatively large amounts of glucose has little or no effect in raising the sugar content of the blood, whereas in the fat and indolent exactly the opposite conditions obtain.—Dr. M. B. Soparkar, of the Bombay Bacteriological Laboratory, discusses the cultivation of the tubercle bacillus directly from sputum and from post-mortem material.—The fallacies of certain modifications of the Wassermann reaction due to variation in complement are considered in a brief article by Major H. C. Brown, I.M.S., and Dr. K. R. K. Iyengar, of the Central Research Institute, Kasauli.—In continuation of previous work on the same subject, Captain J. Morison, I.M.S., and Assistant Surgeon E. C. R. Fox contribute another report on the detection of the origin and mode of spread of an epidemic, and dealing with diarrhœa, dysentery, and cholera occurring in Poona, illustrated by a series of tables, charts, and maps.—A paper by Major Clayton Lane, I.M.S., on the Genus Dacnitis, Dujardin, 1845, is illustrated by excellent plates.—Lieutenant-Colonel J. W. Cornwall, I.M.S., of the Pasteur Institute of Southern India, Coonoor, supplies an interesting contribution to the study of kala-azar, in continuation of his previous investigations. In the present paper he deals with the question, Can the Bug Transmit the Infection of Kala-azar? and this he answers, as a result of his experiments, in the negative. All attempts to make bugs infected with leishmania transfer the infection by biting, either to a sterile culture medium or to animals, failed. Cimex rotundatus cannot transmit either kala-azar or oriental sore by biting; and Conorhinus rubrofasciatus is not concerned in the spread of kala-azar; viable forms of L. donovani and L. tropica are not passed in the fæces of Cimex rotundatus.—Major S. R. Christophers, I.M.S., describes a new anopheline with unspotted wings from Mesopotamia, and Mr. P. R. Awati, medical entomologist, furnishes another instalment of his Studies in Flies, with contributions to the study of specific differences in the genus Musca, dealing on this occasion with "structures other than genitalia."—Of two articles by Dr. Agnes Scott, one is a Contribution to the Study of Osteomalacia in India, and the other on the Calcium Content of the Urine and Blood, with special reference to its Variation in the Condition of Osteomalacia.—The Experimental Production of Congenital Goitre is considered by Major R. McCarrison, whose former work on this subject is well known. Details are given of the experimental production of congenital goitre in goats, illustrated with several plates. His former conclusions were confirmed that this form of goitre is due to the action on the fœtal thyroid of toxic substances derived from the maternal intestine. These substances are the products of micro-organisms, originating in fæcally contaminated soil, which are conveyed to man and animals by infected food and water.—The concluding article of the number deals with malaria in Muscat, and is from the pen of Major Clifford A. Gill, I.M.S.; it is illustrated by several plates and maps, and gives the experience of the author while attached to troops engaged in guarding Muscat from a threatened descent of Arab tribesmen. He discusses fully both the curative and preventive aspects of malaria in this region.

THE CONTROL OF THE FOOD SUPPLY.

THE new Regulations made by Order in Council for the control of the food-supply of the country were published in the *London Gazette* of Friday, Nov. 17th. Under them extensive powers are conferred on the Board of Trade for the control, manufacture, sale, and use of food. The Order takes the form of additions to the Regulations under the Defence of the Realm Consolidation Act, 1914. By the new Regulations the Board of Trade receives powers and discretion to make Orders of any general, special, or local nature to maintain the food supply of the country, while obtaining punitive powers against those who fail to comply with any of the Provisions of the Regulations.

The first seven Provisions, which fall under the additional Regulation 2. F., have the following bearing with reference to any article of commerce the maintenance of which is held by the Board of Trade to be "important as being part of the food supply of the country or as being necessary for the wants of the public or for the wants of any section of the public":—

I. A person shall not waste or unnecessarily destroy any article to which this provision is applied.

II. and III. Where the order applying these provisions to any article specifies the purposes for or manner in which the article is to be used or contains any directions or regulations as to the manufacture or production of the article, a person shall not (subject to any conditions contained in the order) use or manufacture the article otherwise.

IV. and V. Where the order contains any directions or regulations as to the mode of sale or distribution of the article or as to market operations, with a view to securing that the available supply of the article is put to its best use throughout the country or in any locality and with no unreasonable inflation of price, all persons concerned in the sale or distribution of the article shall comply with the directions or regulations.

VI. A person shall not (subject to any exceptions contained in the order applying this provision) directly or indirectly sell or offer for sale any article to which this provision is applied at a price exceeding by more than the amount named in the order the corresponding price of the article at a date specified in the order (the corresponding price to be settled in case of difference by the Board of Trade); and where the consideration for any sale or offer consists wholly or partly of any conditions made or offered to be made in connexion with the transaction, or is otherwise not of a pecuniary character, the value of the consideration or such part thereof as is not of a pecuniary character, shall, for the purposes of this provision, be taken into account in determining the price of the article.

VII. All persons owning or having power to sell or dispose of any article to which this provision is applied or any stocks thereof shall, if required by the Board of Trade, place at the disposal of the Board the article, or the whole or any part of the stocks thereof as may be required by the Board on such terms as the Board may direct, and shall deliver to the Board or to any person or persons named by them the article or stocks in such quantities and at such times as the Board may require.

Such compensation shall be paid for any article or stock so requisitioned as shall, in default of agreement, be determined by the arbitration of a single arbitrator appointed in manner provided by the order applying this provision; but in determining the amount of the compensation the arbitrator shall have regard to the cost of production of the article and to the allowance of a reasonable profit without necessarily taking into consideration the market price of the article at the time.

An addition to the Regulations, 2. G., deals with the returns of stocks and prices; this gives the Board of Trade powers with respect to any article of commerce to obtain a return as to the stocks of the article held, or consigned to, or under order to a manufacturer. The Board can also demand from him information as to his contracts, prices paid or received, cost of production of the article in question, and the names of his clients. For the purpose of testing the accuracy of the returns an authorised officer of the Board may enter any premises of the manufacturer, or of any one dealing with the article, who has failed to make a demanded return, and may inspect and examine books on the premises, as far as may appear necessary. Refusal to make a return, falsely answering any question, or obstructing the authorised officer of the Board of Trade will be made penal offences. Unfair publicity is guarded against, the disclosure of information obtained under the new Regulations being a summary offence against the Regulations.

In a third addition to the Regulations, 2. H., the Board of Trade obtains powers to hold an inquiry with respect to any special case, and can appoint such persons as they may choose to hold the inquiry and to take evidence on oath.

The Control of Milk and Flour.

Two Orders under Regulation 2. F. have already been made.

The Milk Order, which does not deal with milk preparations or dried or condensed milk, enacts that:—

(1) The price may not be raised above that paid at Nov. 15th, 1916.

(2) The price may not exceed by more than a specified amount the price in the corresponding month before the war. This amount in the case of retail milk is 2*d* per quart. The specified amounts that may be added to the pre-war price in respect of wholesale milk are 6½*d*. per imperial gallon delivered on the premises of the buyer where the conditions of sale include an obligation to deliver not less than a specified minimum, and 5½*d*. per imperial gallon in other cases.

The Order, with certain exemptions, comes into force on Nov. 27th.

The Milling Order fixes the following schedule for the percentage extraction of flours in the United Kingdom:—

	Per cent.		Per cent.
English	76	No. 1 Northern Manitoba Old Crop	76
Choice Bombay	78	No. 2 Northern Manitoba Old Crop	75
Australian...	78	No. 3 Northern Manitoba Old Crop	73
Blue Stem	76	Choice White Karachi	75
Walla Walla	75	Soft Red Karachi	75
No. 2 Red Western...	76	Rosafe 62 lb.	73
No. 2 Red Winter	74	Baril 61½ lb.	74
No. 2 New Hard Winter (1916)	76	Barletta-Russo 61½ lb.	74
No. 1 Northern Duluth ...	75		

The Order comes into force for milling on Nov. 27th, and after Jan. 1st, 1917, only flour separated according to the schedule may be employed, any appreciable hoarding being thus prevented.

THE CONTROL OF VENEREAL DISEASES.

Quacks and the Question of Notification.

THE Society of Medical Officers of Health discussed the problems of prevention of venereal diseases at their meeting last week. Dr. John Robertson, the President, expressed his opinion that after a scheme for effective and gratuitous treatment had been successfully brought into being the question of compulsory notification might suitably arise. At present any form of notification would simply drive the patient to the quack. Dr. J. J. Buchan, medical officer of health for Bradford, alluded to the alarming prevalence of quackery in industrial districts and the need for repressive legislation. He agreed with the President that notification should stand over until the campaign was further advanced.

The County of Surrey Scheme.

The Surrey County Council authorised its Public Health Committee last week to proceed with a provisional scheme for the diagnosis and treatment of venereal diseases. It is proposed that (1) all means of diagnosis be provided in the laboratories of certain hospitals in London; (2) means of treatment for most patients residing in the county be provided in certain hospitals in London, and for the remainder in the Guildford County Hospital and the Croydon General Hospital if suitable arrangements can be made. It is expected that the County Councils of London, Bucks, Essex, Herts, Kent, Middlesex, and Surrey, and the County Borough Councils of Croydon, East Ham, and West Ham will participate in the scheme for the use of hospitals in London. The preliminary negotiations with the hospitals are to be left to the London County Council. Each authority is to contribute in proportion to the estimated use of the facilities at the beginning of 1917, payments to be adjusted at the end of the year. The details of the scheme itself are still under discussion. The total cost for the administrative County of Surrey for the first year is not likely to exceed £5000, of which, of course, £3750 will be recoverable from the Local Government Board.

The Dorset County Scheme.

The county medical officer is in negotiation with the committees of the following hospitals with a view to the establishment of treatment centres:—The County Hospital, Dorchester; the Royal Hospital, Weymouth; the Royal Victoria Hospital, Bournemouth; the Cornelia Hospital, Poole; the Yeatman Hospital, Sherborne; the Bridport Hospital; and the Blandford Cottage Hospital.

Mr. T. A. Williams, M.B., C.M.Edin., has been elected Corresponding Member of the National Academy of Medicine of Rio de Janeiro.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 25, 1916.

The Control of the Food Supply.

THERE need be no alarm at the establishment of a State control over the use, distribution, and prices of food in the country. A very general opinion, and one which we share, is now held that some such step should have been taken at the outset of hostilities, difficulties and abuses connected with the sale of food being an inseparable concomitant of war. The conservation of our food supply did not seem to possess, we must presume, the vital importance which it now has, for hitherto our rulers have shown a surprising indifference on the subject, and, let it be added, have been supported in this apathetic attitude by an uninformed public. Now there seems a chance that the steps taken may cause needless apprehension.

The President of the Board of Trade, in his speech in Parliament announcing that his department would be empowered, under Regulations additional to the Defence of the Realm Act, to control the food supply of the country, said that, far from the consumption of foods diminishing with high prices, it had increased. This means that those who are able to afford it are purchasing more food than usual, the burden of the increased expense of living falling disastrously under such action on those with small incomes. That fact justified the Government in the measures already taken in the case of sugar, and the prices of milk and of bread are now, we are glad to see, under control. No one can doubt at all that further considerable economies can be insisted upon without inflicting unendurable hardships. The physiological equilibrium can be well maintained without luxuries, and dietetic excesses are unthinkable in war time. The lesson must be learned by the community that food can be reduced to the exact requirements of the human machine, with considerable benefit to the working of that machine; the medical profession has long preached, and in the main has preached to deaf ears, the doctrine of self-control in the matter of food. The Government will now heal in spite of themselves many victims of unsuspecting gluttony; while for the moment the æsthetic side of food must, to a large extent, be neglected and the sumptuous overloading meal will disappear. The gist of the new Regulations will be found in another column; they should do much to enforce a reasonable regimen on the public. Acting in another direction, the State also takes powers to proceed against any person who wastes or unnecessarily delays or holds up any article of food for a mercenary purpose; the pouring down the sewers of a supply of milk because the contract price did not suit the seller is the sort of regrating which is always mentioned, and if it has occurred it was the act of a criminal. Then, again, it is right that human needs should claim first attention; Mr. RUNCIMAN was able to quote cases in which whole milk had been given to pigs at a time when milk was as difficult to obtain as if there had been a genuine famine. Scandals of this description need prompt arrest, as well as all "profiteering" schemes. The price of milk is now fixed by a Milk Order of the Board of Trade. The price may not be raised above that paid on Nov. 15th, 1916, and may not exceed by more than a specified amount the price in the corresponding month before the war. A Milling Order has also fixed for the United Kingdom the percentages of flour that must be separated from wheat of various qualities, the percentages ranging from 78 to 73. This Order was almost exactly foreshadowed by Mr. RUNCIMAN last week, when it was clear that the Government proposals in regard to flour would place an embargo on the miller and require him to restrict himself to the output of a certain description of flour. The motive is, of course, economy, and the way in which this economy is to be effected without inflicting a nutritive loss on the community is to stop the supply of 70 per cent. flour. There is some confusion in many minds on the meaning of the Milling Order. The stopping the supply of 70 per cent. flour means that instead of working for a yield from the wheat in the milling process of only 70 per cent. of its weight of flour of a particularly refined character a greater yield is now called for to the extent of nearly 80 per cent. This produces the increase of nearly 10 per cent. of materials in the flour, known as "offal," which at present are rejected and find outlets in industries or in cattle-feeding. The gain to the community in this foodstuff would, according to Mr. RUNCIMAN, amount to an increased yield of flour of 8½ per cent. This is not in one way an overstated estimate, though all can see that what is gained in the bread is to some extent lost elsewhere. The public will now not obtain a loaf nearly reduced to mere starch, but one containing germ constituents, including cerealin and semolina. It is this "offal" which contains those obscure substances the vitamines, the preventives of deficiency diseases.

The policy of the Government is perfectly clear, though the details of practical administration are not yet public. Here there may be difficulties, but all the problems connected with the control of food supply are to be referred to a Controller, not yet nominated, who will have full power to act as he sees best. The Regulations so far laid down are sound, for they aim at utilising to the utmost extent whatever foodstuffs are under our hands, and at destroying the schemes of those who would trade on the nation's situation. The proposals, indeed, are temperate, we think, having regard to the urgency of the question.

Infant Mortality and the Care of the Expectant Mother.

THAT both the country as a whole and the medical profession in particular are alive to the urgent importance of preserving infant life is proved by the great activity that now prevails in Government departments, as well as in professional and private circles, in formulating schemes to promote this object. The Local Government Board has recently issued an important circular of revised regulations with respect to the payment of grants to local authorities in connexion with infant-welfare work, which includes the care of expectant and nursing mothers as well as of the infants. These proposals are of the most liberal nature, as may be judged by the fact that the Board undertakes to pay grants during each financial year in respect of the following services: the salaries and expenses of inspectors of midwives, the salaries and expenses of health visitors and nurses engaged in maternity and child-welfare work, as well as for the medical care of the mother during confinement and of the infant during illness. Throughout the counties and boroughs the medical officers of health are busy preparing plans in accordance with these generous provisions, and already the number of health visitors appointed by local authorities shows a great increase since the commencement of the war—to be precise, from 600 to 1090. Meanwhile, the National Association for the Prevention of Infant Mortality, which exercises a vigilant eye over the medical and voluntary aspects of this movement, announces the appointment of a strong and representative committee for the foundation of a great national institute of mothercraft. Nothing that is connected with the welfare of motherhood and infancy is to be outside the scope of this projected organisation. All the scattered activities, which are now independently doing good work, are to be focussed in this one national or imperial centre. The proposed aim of the institute is essentially preventive, and among the contemplated departments are to be numbered an ante-natal clinic, an infant consultation, a day nursery, a nursery school, an observation ward for wasting babies, as well as facilities for teaching and research. Here centred under one roof there are to be gathered together a series of model departments to afford ocular and practical demonstration of the manner in which work of this kind should be conducted in all its best social, domestic, and clinical aspects. The effect of such practical example should spread over the whole country and raise the standard of administrative efficiency in all that concerns mothercraft.

A series of papers, constituting a sort of symposium, were recently read at the Royal Society of Medicine before the Section of Obstetrics and Gynæcology—and we owe to the society an advance proof of these papers, which will, we presume, be published later in the Transactions. They all bear directly on the salvation of the infant, and prove that the medical profession is alive to the need for safeguarding the interests of the expectant mother and thereby those of the now greatly valued offspring. Although much still remains to be perfected in the details of infant management, it is now well recognised that the results of good mothercraft are, if not exactly wasted, at least greatly depreciated unless there has been a corresponding safeguarding of the interests of the child's health before birth. The fallacy of the old belief that 90 per cent. of all babies are born healthy is gradually but surely being exposed by such inquiries as those which are recorded in one of the papers alluded to, an admirable essay by Dr. AMAND ROUTH on "The Importance of getting a Pregnant Woman under Medical Supervision and Affording her the Necessary Treatment"; and in another useful contribution by Dr. S. G. MOORE, medical officer of health of Huddersfield, on "The Need for Improvement in the Care of Pregnant Women and a Direct Means to that End." It does, indeed, seem paradoxical in the light of such evidence, and in that of much other work which has accumulated on the same subject during recent years, that the belief in the physical soundness of the majority of new-born babies should have gained and still retains such wide currency. The same adverse causes as compass the death of the embryo and fœtus *in utero* when the degree of injury is intense, tend also to impair the general efficiency of the developing organism when the degree of injury is less severe. Although there is no practical standard by which we can estimate the degree of vitality of the new-born baby or his chances of survival, it is probable that the number of infants who are perfectly healthy at the time of birth is not large At any rate, it is impossible to deny that there are practically none whose chance of survival could not have been improved by better management and sounder hygienic methods during the all-important period of intra-uterine life. In this connexion a paper by Lady BARRETT on "The Importance of Linking-up all Organisations for Maternity and Child-Welfare in Local Health Districts," and one by Dr. COMYNS BERKELEY on "The Maternity Centre and its Relation to the Private Medical Attendant and the Midwife," proved interesting contributions to the discussion.

In a memorandum to his committee Dr. A. K. CHALMERS, medical officer of health of Glasgow, outlines a very comprehensive scheme of child welfare suitable for a large community, such as that over which he holds medical jurisdiction. In this he insists that there is abundant evidence to prove that much of the life lost in infancy is avoidable only by the exercise of prophylactic measures directed towards ensuring the health of the mother antecedent to the birth of the child, and the new provisions contained in the recent Memorandum of the Local Government Board form a frank acknowledgment that those hitherto made have been inadequate.

UNIVERSITY OF CAMBRIDGE AND THE M.B. FOR WOMEN.—The grace for opening the First and Second M.B. examinations to women has been approved.

Annotations.

"Ne quid nimis."

LABYRINTHINE DISTURBANCES IN MILITARY CASES OF CEREBRAL CONCUSSION AND INJURY.

A USEFUL contribution to the study of the symptoms of commotio cerebri and of intracranial injury generally has been made by Dr. François Moutier. Impressed by the frequency with which vertigo, accompanied or not by impairment of hearing and of equilibration, is complained of by soldiers with head injuries or with simple commotio, he made an examination of 46 cases, of which 28 were cases of actual cranial trauma, while the remainder belonged to the concussion group. Among the 28 only 6 were instances of frontal or occipital lesion; all the others had been wounded in the temporo-parietal region. The examination was conducted on an average some eight months after the injury. No fewer than 40 of the 46—i.e., 87 per cent.—presented symptoms of labyrinthine defect, although, as may be imagined, the other intracranial symptoms to which these were joined were of a very variable description. In only half the cases was any objective impairment of hearing remarked, though tinnitus in some form was conspicuous by its frequency, while the cases with the most definite auditory defects were also those in which vertiginous attacks were most pronounced. Titubation was a fairly common occurrence, but Romberg's test for static ataxia was positive in only seven cases. The two tests employed by Dr. Moutier were Babinski's method for galvanic vertigo and Barany's caloric test, and he mentions his unhesitating preference for the former as being more practicable and attended with more constant results. Further, Babinski's test is much less likely to occasion such general disturbance of the patient as to render difficult the investigation of the experimentally produced phenomena, which, it is well known, are transient and therefore necessitate quick and precise observation. It is performed as follows. With the electrodes placed just in front of the tragus on either side there is produced, with a galvanic current of from 3 to 5 milliampères, a rapidly increasing sensation of vertigo, with a varying nystagmus. As the current increases the head is inclined, with or without rotation, to the shoulder of the side on which is placed the anode. Should there be a labyrinthine lesion, however, the head is inclined to the side of the lesion whatever be the direction of the current, while, in addition, there is a raised threshold for the production of the vertiginous sensation, so that it, and indeed the nystagmus also, may be completely wanting. The increase of resistance to the artificial production of vertigo is not so common as the inclination of the head, which is constant. Dr. Moutier found a raised threshold in 16 of the 40 cases; in 10 of these no less a current than from 13 to 26 milliampères was necessary to produce vertigo. Some of these were cases of actual trauma, others were instances of commotio cerebralis. Some, again, showed the increase of resistance bilaterally, others unilaterally; as a rule, it was present on the side of the cranial lesion. A remarkable fact was observed in three cases of occipital lesion and in none of the others of the series—viz., that the resistance was bilaterally diminished and that vertigo was produced with a current of less than 1 milliampère. As for the inclination of the head, Dr. Moutier states that he has found experimentally that its threshold is some 3 to 6 milliampères above that for the determination of vertigo in the normal individual; in his pathological cases the difference is much greater, varying from 8 to 18 milliampères. Two only of the 40 showed no head inclination; they were both cases of parietal lesion, and in them vertigo was readily produced. In 13 of the 18 cases of commotio the inclination was always to one and the same side; in the majority of the traumatic cases the inclination was to the side of the lesion whatever the direction of the galvanic current. The three occipital cases and seven others gave a movement of the head in an antero-posterior direction, unaltered by a change in the passage of the current. Dr. Moutier draws particular attention to a transient mental obnubilation, a sort of artificially produced mental confusion, which is apt to appear after the vertigo and previous to the head deviation. It is sometimes intense, coinciding with severe vertigo, and sometimes increasing to an actual loss of consciousness. The interesting point is that not a few of his patients declared the "shock" thus produced to be identical with the shock which they experienced at the moment of being wounded; whence Dr. Moutier conjectures that in every case of commotio cerebralis it is probable a labyrinthine element participates. As for Barany's tests, these were performed in 14 cases, in only two of which was any characteristic result obtained in its entirety. Speaking generally, the obnubilation was so intense and persistent that it tended to obscure the other phenomena. One of the practical deductions drawn by the author from these investigations, which were published in full in the *Revue Neurologique* for July last, is the value of the tests in establishing the sincerity of patients whose subjective symptoms might otherwise be regarded somewhat sceptically by the physician.

DREAMS.

THE subject of dreams and their causation has claimed attention from the earliest times, probably from the dawning of man's consciousness. Exact knowledge on the subject is in the nature of things difficult to obtain, and most of the facts on which rival theories are based are themselves occasions of dispute. Dr. Robert Armstrong-Jones, in a recent address to the Abernethian Society, reported a number of interesting facts, both ancient and modern. He considers that on analysis 60 per cent. of dreams will be found to relate to sight, 5 per cent. to the sense of hearing, and only 3 per cent. and 1·5 per cent. respectively have reference to taste and smell. The two latter being the more primitive and organised of the senses, frequently attach themselves in dreams to sight and hearing, the objects to which taste and smell relate being visualised or heard. After briefly setting out how the mind normally works in a waking state, Dr. Armstrong-Jones defined his conception of the working of a dream as follows:—

> These three factors—viz., cognition, feeling, and will—are the invariable accompaniments of every mental process, whether an object is presented from without, or its picture is experienced from within. The same analogy applies to presentations and representations referring to the organic sensations. In dreams these factors tend to become dissociated; the will remains in abeyance, whilst the cognitive elements may be represented alone, or grouped with others which are similar or dissimilar; the feelings may also be represented to the mind and may either be painful or pleasurable. It is the will which refuses to act, and it is questionable whether a dream, once initiated, can ever be

modified by the will, although some persons state that they are able to modify a dream, and that they have frequently done so.

In discussing the interpretation of dreams by the psycho-analytic method, the lecturer, in evident warning to some of his colleagues in psychiatry, deprecated the reading of one ruling thought into their causation; due place must be given to other instincts which are as primary and original as sex and of which fear, anger, and hunger are the commonest examples. He alluded to the want of purposeful character in dreams and to the practical advantage which results from this to the dreamer:—

> In the waking state we are always adapting ourselves to our needs, but in sleep we have ceased to select and choose. The mind in its relaxed state brings together memory associations which were formerly packed away in the "storehouse of the unconscious mind," the reason fills up the gaps, and a confused impression results which is the material of dreams. As is well known, the brain cortex is restored and refreshed only during sleep, and it is a comfort to know that we dream most about events to which no attention has been paid; were it not so, our sleep would be distracted and preoccupied by events that are of importance and which have been our concern during the day, so that our waking life would be prolonged as a permanent dream into the sleeping life and the necessary rest and nutrition of the brain would be impossible.

The address was heard with interest and profit by the audience.

ACUTE HEART-BLOCK THE FIRST SIGN OF RHEUMATIC FEVER.

ACUTE heart-block during the course of rheumatic fever has been described by several writers, but its detection before the appearance of other signs of the disease has not been chronicled. In the *American Journal of the Medical Sciences* for October Dr. Paul D. White, however, reports the case of a youth who came to the Massachusetts General Hospital on Dec. 16th, 1915, because he "ached all over." Four days previously he had "caught cold," and since then he had had coryza, cough, headache, and backache. For a couple of days he had been troubled by palpitation and for one day he had noticed lameness in the right arm, but he complained of no definite joint pain. He appeared ill, but examination revealed only redness of the throat (tonsils not large or inflamed), pronounced reduplication of the cardiac second sound, heard best at the apex, and irregularity of the pulse. The temperature and urine were normal. The joints appeared normal. The seriousness of the youth's condition was not appreciated until the graphic record of the pulse was obtained. A polygram of radial and jugular pulses showed very defective auriculo-ventricular conduction, with marked prolongation of the *a-c* interval (up to 0·5 second), frequently leading up to dropped beats. In the venous tracing the *a.* and *v.* waves occurred together, producing very high excursions. Right or left vagal pressure increased readily the degree of block. After establishment of this diagnosis of heart-block, apparently of infectious origin, the patient was put to bed, where he remained for two weeks, suffering from a severe attack of acute polyarticular rheumatism. The joint symptoms began a few hours after admission, and in four days the knees, toes, and right hand were swollen red, painful, and tender. Treatment consisted of the administration of salicylates by the mouth and of oil of gaultheria applied to the affected joints. On Dec. 20th a polygram showed no longer any dropped beats, but still a definite prolongation of the *a-c* interval. On Jan. 11th, 1916, the patient again came to hospital, and an electro-cardiogram showed normal rhythm with a *P-R* interval slightly long (0·20 second). He felt well, except for slight pain in the left heel. No enlargement of the heart was made out, and there were no murmurs. The reduplication of the second sound had disappeared. The joints appeared normal. On Jan. 29th, 45 days after the block was first discovered, an electro-cardiogram showed normal rhythm with a perfectly normal *P-R* interval. It is noteworthy that the myocardium not only gave the first evidence of the importance of the illness, but also showed at least temporary damage, while no evidence was found of endocardial or pericardial involvement. Three cases of transient heart-block in rheumatic fever have been described by Sir James Mackenzie, and some by other writers, with no evidence of valvular damage.

THE EDITH CAVELL HOMES OF REST FOR NURSES.

WE recently drew attention to an appeal signed by Lady Haig and others on behalf of these homes which are intended as a memorial to Edith Cavell. That appeal was virtually put forward in the name of the Army. Lady Jellicoe has now issued a corresponding one on behalf of the Navy, pointing out the untiring energy with which nurses have worked during the war and the real need for rest and recreation if they are to continue their strenuous work. We are sure that the public, as well as our sailors and soldiers, will show their gratitude for the self-sacrificing work of our nurses by generous subscriptions. Homes of rest to enable nurses to carry on their work more effectively are needed now, but in all probability the need will be as great, if not greater, when the aftermath of sickness and suffering produced by the war has to be dealt with. Subscriptions may be sent to the offices of the Fund, 25, Victoria-street, Westminster, S.W.

THE RELATIVE VALUE OF ANTI-TUBERCULOSIS MEASURES.

IN a Memorandum prepared for the Scottish Association of Insurance Committees the medical officer of health of Aberdeen, Dr. Matthew Hay, enumerates the measures employed to date for dealing with tuberculosis in that city. The list is instructive and begins with a report prepared by the medical officer of health in 1899, but on which no administrative action was taken, except that the houses of tuberculous patients were disinfected after removal or death and medical men were supplied with a card for distribution to consumptive patients entitled "Instructions for Preventing Spread of Consumption." A wing for consumptives, accommodating about 12 patients, was added to the Newhills Convalescent Home in 1902, but it was not until February, 1911, that wards and shelters at the City Hospital provided treatment for about 70 cases. Voluntary notification of all forms of tuberculosis commenced in the same year. A tuberculosis medical officer was appointed in 1913 and a tuberculosis care committee in the following year. These and a number of other provisions now complete a scheme of which the most recent act was the vote in October last of an annual sum of £100 from the "Common Good" towards the provision of additional room in needy tuberculous households. In the face of all this activity Dr. Hay, however, assures the association that although tuberculosis is the only disease at present being dealt with under

the Sanatorium Benefit Section of the Insurance Act, it is, in his opinion, more likely to recede before general hygienic measures than from any attempt to deal with it directly. The enormous fall in the mortality from tuberculosis in the last 50 years, in Aberdeen a fall to little more than one-third of its former level, has not, it appears, been due to the discovery of more effective remedies. At any rate, Dr. Hay says that after study of the published results of practically every remedy put forward with any show of authority, and after some actual trial in tuberculosis wards of what appeared to be the best of these, he concludes that none, not even tuberculin, is of any real value in the vast majority of cases. He thinks it doubtful if a specific remedy for tuberculosis will be found, or if medico-chemical science will devise a chemical remedy of the type recently created for the treatment of syphilis; he is prepared to fall back, as the best of all means of treatment, upon the breathing of pure air, good and plentiful food, a congenial and not too sedentary occupation, temperate habits, and freedom from serious worry. In other words, the medical profession must seek to make every home and every workshop a sanatorium, not merely in respect of its construction and ventilation, but also, so far as possible, with regard to the other matters that make for a healthy life. The great decline in the death-rate from tuberculosis in recent times is as much due to higher wages, shorter hours, and better conditions of labour as to anything else, and though the death-rate in Scotland from all causes has recently been going up, as a whole, quite apart from the deaths due directly to the war, the death-rate from tuberculosis has not ceased to decline. It is perhaps to be expected of a health officer that he should lay special stress on the value of public health measures, but it is noteworthy that the health officer of a city which has done as much as Aberdeen has to elaborate special arrangements for the treatment of tuberculosis should give prominence to the part played by higher wages and better housing.

EUGÈNE LOUIS DOYEN.

THE death of Dr. Doyen last Tuesday, at the early age of 57, removes a figure well known in surgical circles not only in Paris. Unattached to any large hospital or teaching institution, his views on the etiology and treatment of cancer attained world-wide publicity. The *Micrococcus neoformans* was first observed by him in cancerous lesions in 1886, and he believed himself to have shown it to be the *causa causans* of cancer. A paper in THE LANCET in 1906 by Dr. A. Paine and Dr. J. Morgan, contributed from the Cancer Hospital, was accepted by British observers as conclusive proof that the French discoverer was in error. But Doyen's work was honest and painstaking, although the non-fulfilment of expectations brought him into violent conflicts in civil courts and with members of his profession. It is also claimed for Doyen that he was the pioneer of the cinematograph teaching of surgical technique; certainly some of his operations were thus represented in 1898.

AT the next meeting of the West London Medico-Chirurgical Society, to be held at the West London Hospital, Hammersmith-road, W., on Dec. 1st, at 8.30 P.M., Dr. T. H. Hyslop will read a paper entitled "The Psychology of Warfare." All medical men interested in the subject are invited, whether members of the society or not.

REPORT OF THE COUNTY MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER OF LONDON FOR 1915.

(*Concluded from p. 839.*)

PART II.—ELEMENTARY EDUCATION.

EVER since the reorganisation of the Public Health Department in July, 1911, Dr. Hamer's review of his work in connexion with the school medical service has formed an essential part of his annual report to the County Council. The Board of Education has recently expressed the opinion that the medical inspection of school children who appear to be ailing, and the maintenance of treatment at present being undertaken, should be regarded as the first charge on the time of the staff. In communicating this opinion to the Council, the Board announced the grant of £47,177 in aid of the medical services connected with public elementary schools during 1915. The grant has been assessed at the maximum rate, representing 50 per cent. of the Council's expenditure on medical inspection and treatment. It exceeds by £9000 the grant for the previous year. As a result of the war considerable difficulties have been encountered in continuing work already undertaken, and progress has necessarily been retarded. Nevertheless, the standard previously attained has not been seriously lowered. The Council's policy has been to maintain the work of inspection generally at its former level, although economy has been found practicable in certain directions. For example, in place of the detailed examination of all entrants, the Council has sanctioned the substitution of a preliminary examination of entrants followed by a further examination of selected children. The measures already taken have resulted in economy equivalent to the time of 4½ doctors, and the staff has been reduced accordingly. Concurrent reductions have also been effected in the nursing and clerical departments. In order to meet the shortage of staff many statistical returns have been temporarily suspended. It is satisfactory to find that the arrangements already in force under the Council's treatment scheme are still to be continued. Thus the Board's suggestions have been generally complied with.

Medical Inspection of School Children.

In spite of the formidable difficulties of war time the work of school medical inspection has been efficiently maintained. In the course of the year 308 959 children were medically examined, or about 15,000 more than in 1914. Of the number examined in 1915, nearly 110 000 were found to require treatment for one or more serious defects. The three indices of straitened home circumstances—viz., the condition of the children in respect of clothing, of nutrition, and of cleanliness—being taken into account were found to reflect an improved position in many of the homes of the poor.

Disease Incidence.

Infectious conditions among school children.—The increased incidence of *scarlet fever* in London during 1914 was followed by a marked falling off in prevalence during the following year. Although in 1915 there was no abnormal prevalence in the county generally, local epidemics in the north-east and south-west of London were responsible for a number of school outbreaks which made serious demands on the services of the doctors. Inspection of 155 schools was made from time to time for the purpose of examining children in infected classes in quest of the sources of trouble. In consequence of the prevalence of scarlet fever and diphtheria in the Swaffield-road school at Wandsworth, all its departments were closed for disinfection during three weeks of November. This was the only occasion in the course of the year in which school closing was resorted to. The outbreak at this school appears to have been part of a general prevalence throughout the borough. *Diphtheria* showed no marked diminution in 1915, its somewhat marked prevalence in 1914 having been maintained throughout the following year. In the course of the year 51 schools were visited by school medical officers in order to examine suspected cases. Bacteriological examination was made of 1040 children, of whom 133 were found to be harbouring diphtheria bacilli, whilst in 53 other cases organisms were discovered not

definitely distinguishable from the diphtheria bacillus. *Measles* was exceptionally prevalent throughout the first half of 1915; the total number of attacks reported from the schools during the year was 31,313. An epidemic commencing in February spread throughout London, increasing in intensity until June, when the incidence began to decline. The number of schools under observation was 857, and of "departments" 986. Measles and German measles were made notifiable by order of the Local Government Board in November, 1915. In the course of the year *whooping-cough* was slightly more prevalent than the average. *Ringworm* has been observed in the last two years in fewer instances than usual; the proportion of cases treated by X-rays has risen from 30 to nearly 50 per cent. of the cured cases, and it is certain that the attention paid by nurses has been largely instrumental in staying the spread of infection amongst school children. *Favus* was detected in 29 fresh cases during the year, chiefly in the East End schools. Of these cases 16 were treated by X-rays. At the end of the year 22 children were known to be suffering from favus.

Adenoids and enlarged glands.—Systematic inquiries continue to be made respecting the occurrence in school children of adenoids and enlarged tonsils. Catarrhal affections of the mucous lining of the respiratory passages are rife among London school children. Accompanying these conditions is found overgrowth of the natural lymphoid masses, particularly of the tonsils and of the adenoid tissue of the nasopharynx. The almost inevitable spread to the middle ear of the unhealthy state of the throat renders the association of adenoid growth with deafness an extremely close one. The most striking accompaniments of adenoid growths are found to be, firstly, deafness and ear discharge and, finally, mental dullness and retardation of intellectual progress. The very serious interference with educational efficiency thus produced was apparent as soon as medical inspection became general. As a result of the early treatment now available the conditions referred to continue to abate.

Tuberculous affections.—Only 0·19 per cent. of the school children examined were found to be suffering from tuberculous phthisis last year, a distinct drop as compared with previous years. Other tuberculous disease was detected in 0·25 per cent. of the children examined, practically the same proportion as that formerly found. The smaller number of cases of phthisis is probably connected with the improved provision now existing for treatment in sanatoriums. It is noteworthy that a large number of phthisical children are now systematically excluded from school at the request of the tuberculosis officers of the dispensaries.

Rickets.—Among the school children medically examined last year 1·97 per cent. were found affected with rickets, compared with 1·72 per cent. in 1914 and 2·1 per cent. in 1913. This condition is usually recognised about the sixth month, and produces its main effects within the first two years of life. In the course of 1915 Dr. J. Lawson Dick examined upwards of 1000 children in East London, of whom about 800 were Jewish. In spite of the special care bestowed by their parents, the well-developed, well-clad Jewish children are not infrequently rickety. As regards food, 81·4 per cent. of these babies were breast-fed. Among 300 non-Jewish children at the Hackney Centre for Mothers 57 per cent. were breast-fed entirely, and 20 per cent. were only partially breast-fed owing to the out-door work of their mothers. As the majority of these poor women nursed their children the presence of rickets cannot be mainly due to want of mothers' milk. Of the 1000 children examined only 20 per cent. were entirely free from signs of rickets, while 72·5 per cent. of breast-fed and 87 per cent. of bottle-fed babies presented evident signs. Only one-fifth of these rickety children were manifestly ill-nourished. The social circumstances favouring rickets appear to be defective housing and overcrowding, with absence of sunlight and ventilation. If to these are added deficiency of food, especially of a nitrogenous kind, and insufficient exercise in the open air, the dangers are aggravated.

Heart diseases.—The number of children with heart defects found at routine medical inspections is tending to increase.

Re-inspection and "Following Up."

Although the activities of many voluntary helpers have been diverted by the war, the indispensable work of "following up" by re-inspection has been continued with success throughout the year. In the course of that period 78,000 children were seen at first re-inspections, while more than 4000 children due for re-inspection were found to have removed, and therefore to be untraceable. At the second re-inspections nearly 38,000 children were seen. There were discharged as cured, or as "not amenable to treatment," 48 per cent of the children seen at first inspections, and 28 per cent. of those "accounted for" at second inspections. The tramway facilities offered by the County Council to children and parents travelling to and from school treatment centres have achieved their purpose.[1] During the ten months ending with August last more than 16,000 cheap tramway tickets were disposed of under this arrangement.

Medical and Dental Treatment.

Comparatively little progress took place last year in the arrangements for treatment of school children, the Council being of opinion that the time was inopportune for extending their schemes beyond the establishment of centres already sanctioned. During the year there was again a decline in the number of children referred for treatment for ear, nose, and throat defects. The juvenile sufferers from ringworm are evidently decreasing in number, and the provision for their treatment has accordingly been somewhat reduced. The nursing treatment of minor ailments has been particularly satisfactory, 20 419 children having been treated last year, as against 14 634 in 1914. The arrangements for dental treatment have been continued. During the year nearly 45,000 children have received dental treatment at the Council's centres, against 32,000 in 1914.

Open-air schools.—The children in the Council's open-air schools at Birley House and Shooter's Hill have been kept under medical supervision and individual records of health and progress have been preserved. The majority of the inmates are stated to have received very considerable benefit from their residence at the schools It has been decided to close these establishments during the school holidays, for the period of the war; but arrangements have been made for the attendance of the school doctor, in order to safeguard the health and nutrition of particular children during the period of closure.

Kensal House Tuberculosis School.—This school is under the supervision of the medical officer of the Paddington Tuberculosis Dispensary, from which institution the children are drawn. The average number of children on the roll during the year was 100. There was marked variation in the attendances from month to month, the lowest being in March and the highest in November. During the year 29 children left the school and 35 were referred for further treatment. Careful physical measurements, which showed encouraging results, were kept during the period of residence in the school.

Personal hygiene.—The duties of the school nurses were specified in the medical officer's report for 1914. They include the inspection of the school children, and the treatment of those who are found verminous in head or body, or who are suffering from scabies. In order to induce systematic periodical examination the nurses visit the schools according to a rota. Last year the number of examinations approached 2½ millions, of which 1¾ millions were found clean. Of the total examined 20·8 per cent. were reported verminous. There are 24 stations for the cleansing of verminous children. Of the children there dealt with more than 28,000 were found verminous to such an extent as to call for special action. Of these, 13 000 were treated at the cleansing stations and nearly 15,000 were cleansed by the parents. The arrangements for the treatment of children suffering from scabies were continued. The total number bathed during the year was 1,059, the average number of baths required for a "cure" being 6. There is little doubt that owing to war conditions scabies is on the increase, for which reason the scheme of coöperation existing between the general hospitals and the cleansing stations may be expected to prove valuable.

[1] See THE LANCET, April 22nd, 1916, p. 879.

A PRIZE of £50 and the medal of the Institute, for an essay on Maternity and Child Welfare offered by the Royal Sanitary Institute have been awarded to Miss I. Macdonald, secretary of the Royal British Nurses Association, and Miss K. C. Atherton, writing a joint essay under the motto "Isis." 137 essays were submitted.

A MONTHLY RECORD OF ATMOSPHERIC POLLUTION.

COMMITTEE FOR THE INVESTIGATION OF ATMOSPHERIC POLLUTION: SUMMARY OF REPORTS FOR THE MONTHS ENDING *June 30th, 1916.* *July 31st, 1916.*

Place.	Rainfall in millimetres.	Metric tons of deposit per square kilometre. Insoluble matter. Tar.	Carbonaceous other than tar	Ash	Soluble matter. Loss on ignition.	Ash.	Total solids.	Included in soluble matter. Sulphate as (SO_3).	Chlorine (Cl).	Ammonia (NH_3).
ENGLAND.										
Exeter	37	0·01	1·66	4 49	1·09	3·52	10·77	1·36	0·22	0·05
Leicester	39	0·13	2·91	4·81	1 08	2 54	11·46	1·27	0·36	0·14
London—										
Meteorological Office...	37	0·05	1·60	2·77	1·04	2·24	7·60	1·12	0·53	0·03
Embankment Gardens	42	0·32	8·44	11·67	2·95	4·60	27 97	2·41	0·57	0·15
Finsbury Park ...	62	0·08	2·34	6·82	2·06	3·97	15·27	1·54	0·41	0·04
Ravenscourt Park	52	0 17	1·18	3·34	1·40	4·02	10·10	1 87	0·22	0 15
Southwark Park	39	0·05	3·07	7·95	0 93	5·16	15·15	1·29	0·33	0·09
Wandsworth Com.	39	0·06	1 17	4·43	1·13	2·62	9 40	1 31	0·23	0 06
Victoria Park ...	42	—	2·10	7 61	1·63	3·87	15·22	2·13	0·38	0 13
Golden Lane ...	56	0·12	2·98	4·67	2·47	4 04	14·27	2 35	0·74	0·31
Malvern	42	—	0·18	0·46	0·46	1·10	2·20	0·56	1·39	0·02
Manchester—										
Queen's Park ...	67	—	—	—	—	—	19·80	—	—	—
School of Technology	61	—	—	—	—	—	22·30	—	—	—
Newcastle-on-Tyne	50	0·49	4·97	13·26	1·50	5·81	26·04	2·50	0·34	0·06
York	42	0·05	0·66	1·28	1·33	2·99	6·31	1·25	0·29	0·04
SCOTLAND.										
Coatbridge	87	0·10	1·81	5·81	1·60	4·20	13·52	1·71	0 20	0·15
Greenock	46	0·11	3·21	6 68	1·39	3 51	14·90	1·50	0·13	0·11

Place.	Rainfall in millimetres.	Metric tons of deposit per square kilometre. Insoluble matter. Tar.	Carbonaceous other than tar	Ash.	Soluble matter. Loss on ignition.	Ash.	Total solids.	Included in soluble matter. Sulphate (as SO_3).	Chlorine (Cl).	Ammonia (NH_3).
ENGLAND.										
Exeter	27	0 01	0·92	2·87	0·39	1·81	6·00	0·64	0·13	0·02
Leicester...	33	0·09	2·31	4·47	0·67	2·03	9·57	0·97	0·23	0·11
London—										
Meteorological Office...	34	0·05	1·74	5·75	1·39	2·77	11·70	1·14	0·36	0·17
Embankment Gardens	26	0·11	4·11	6·57	1·87	3·64	16·31	2·08	0·27	0·15
Finsbury Park ...	39	0·05	1·35	3·91	0·19	2·28	7·77	0·89	0·18	—
Ravenscourt Park	41	0·04	1·90	5·36	0·83	3·46	11·58	1·40	0·05	0·10
Southwark Park	33	0·07	2·59	7·20	0·93	3·52	14·31	1·57	0·24	0·06
Wandsworth Com.	31	—	1·44	5·93	1·04	3·92	12·34	1·57	0·23	0·03
Victoria Park ...	39	0·01	1·69	4·96	2·05	3·82	12·12	2·00	0·40	0·14
Golden Lane ...	47	0·06	1·89	2·35	1·33	2·85	8·47	1·44	0·44	0·14
Malvern	42	—	0·18	0 25	0·38	0·62	1·43	0·38	0·05	0·01
Manchester—										
Queen's Park ...	52	—	—	—	—	—	13·30	—	—	—
School of Technology	44	—	—	—	—	—	24·10	—	—	—
Newcastle-on-Tyne*	—	—	—	—	—	—	—	—	—	—
York	42	0·14	1·55	3·95	1·58	3·23	10·46	1·31	0·27	0·04
SCOTLAND.										
Coatbridge	88	0·11	1·69	5·42	1·06	4·03	12·31	1·38	0·18	0·13
Greenock	44	0·19	2·73	5 04	1·15	2·62	11·75	1·18	0·09	0·08

* Results lost through accident.

"Tar" includes all matter insoluble in water but soluble in CS_2. "Carbonaceous" includes all combustible matter insoluble in water and in CS_2. "Insoluble ash" includes all earthy matter, fuel, ash, &c. One metric ton per sq. kilometre is equivalent to: (*a*) Approx. 9lb. per acre: (*b*) 2·56 English tons per sq. mile; (*c*) one gramme per sq. metre; (*d*) 1/1000 millimetre of rainfall.

The personnel of public health authorities concerned in the supervision of these examinations and of the analytical work involved remains the same as published in previous tables.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

THE annual meeting of Fellows and Members of the College was summoned for Thursday, Nov. 16th, at 3 o'clock, but at that time the number of Fellows and Members required to form a quorum was not present. Sir WILLIAM WATSON CHEYNE, the President, waited until a quarter past the hour before stating from the chair that as less than 30 persons were present he was compelled by the regulations governing the annual meeting to declare that the meeting would not be held. He added that if the Fellows and Members present were willing he would present the annual report and would comment on some of the items contained in it. There was complaint from some of those present that the President had not waited longer before calling the meeting off, and it was stated that the rule had not been insisted on at previous meetings, but the President, in reply, said that at no previous meeting had the quorum failed. He then proceeded to discuss the annual report. He mentioned that with regard to the vexed question of the representation of the Members on the Council of the College, the Council had received a letter from a provincial Member which expressed so clearly the objections to the proposed alteration that the Council had thought it well to publish the letter in the annual report. The attention of the Council, he said, had been drawn by the Lords Commissioners of the Admiralty to the abuse of medical certificates, and the Council had stated that they would draw the attention of their Fellows and Members to the need for great care in this respect. During the year the President and the Vice-Presidents had met officials of the Local Government Board to confer on the subject of the special fees to Poor-law medical officers, and as a result of these conferences it had been decided to introduce several alterations and amendments in the General Order of the Board relating to the matter. Sir Frederic Eve had acted as the representative of the College on a committee appointed by the Home Secretary to consider under what conditions licences to drive motor cabs, omnibuses, and tramway cars should be granted to men suffering from some partial physical disability. He (the President) mentioned that the Council had assisted the Local Government Board in drawing up regulations on the organisation of medical measures against venereal disease. Some steps had been taken to lighten the curriculum required for dental students, and though these changes had not yet come into force they would probably do so shortly. In reference to the lectures and demonstrations in the Museum, the President mentioned that a large number of demonstrations had been given by the Conservator, and that the attendance at these demonstrations had been very good, the average being over a hundred. The Council had been asked to appoint an advisory committee in association with the Royal College of Physicians of London to assist the Central Medical War Committee, and much good work had been done by this committee. With reference to the finance of the College the war, as was natural, had had an influence upon it, and especially had there been a great decrease in the fees received for the Fellowship examinations; but the expenditure had also been reduced, so that the final result was satisfactory. The President stated that it was hoped to arrange for some memorial at the conclusion of the war to the Fellows and Members who had died on naval or military service. He then stated that though no resolution could be moved, he was quite willing that there should be some informal conversation.

Lieutenant-Colonel JOSIAH OLDFIELD pointed out that the letter contained in the report denying that Members desired to have the franchise was anonymous, and therefore not of the slightest value. The Council and the Members differed entirely in their conception of the functions of the College; the Council seemed to assert that the College existed solely for the advancement of the science of surgery, yet the report which the Council had issued contained clear evidence that matters connected with the well-being of the Fellows and Members were also considered. The Fellows on the Council were not in a position to speak with authority on such a subject as the special fees of Poor-law medical officers, and yet the President and the Vice-Presidents had conferred with the Local Government Board on this matter.

Dr. GEORGE JONES said that the Council appeared to agree with the statement in the valueless letter from the

anonymous Member that trustees could hand over a trust to other people; this showed an absolute lack of knowledge of the duties and powers of trustees.

Dr. SIDNEY C. LAWRENCE asked the President to allow the meeting to proceed, as the needed quorum was then present. He wanted to know when the Council intended to remove from the roll of Fellows the names of the six Hun Fellows now to be seen there. He expressed the appreciation of the Members of the services of Sir Victor Horsley in the prosecution of their claims to representation, and he spoke feelingly of the action of Sir Victor Horsley in going to Mesopotamia to help in the war.

The PRESIDENT brought the meeting to a close at the expiration of an hour.

MEDICINE AND THE LAW.

Christian Science and the Law in the State of New York.

IN the New York Court of Appeals a judgment regarding Christian Science has recently been delivered which will be of interest to the medical profession here as well as in the State of New York. The points raised depended only upon the interpretation to be placed upon certain passages in a law of the American State, but a wider interest arises out of the consideration of the proper principles of legislation for the matters involved. A man named Cole, "a Christian Science healer," was prosecuted at the instance of the New York County Medical Society upon a charge of practising medicine as defined by Section 160 of the Public Health Law of the State of New York without being duly licensed therefor. After the jury had disagreed at his first trial a second jury convicted Cole, and an appeal followed upon the questions of law raised by the judge's charge to the jury—that is to say, upon the applicability of the section of the Public Health Law to the facts proved. The facts themselves do not appear to have been disputed. Cole administered "Christian Science treatment" in return for fees, and a woman investigator deputed to obtain evidence had the treatment applied in respect of an affection of her eyes, real or fictitious. She described the process by saying Mr. Cole, after explaining the attitude of Christian Science towards disease, "placed his chair facing mine, closed his eyes, and put his hands up to his face, and we remained in perfect silence thus for about 15 or 20 minutes." The Public Health Law referred to forbids the practice of medicine by any person not registered or licensed in accordance with its provisions, and defines the practice of medicine thus:—

> A person practises medicine within the meaning of this article, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate, or prescribe for any human disease, pain, injury, deformity, or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate, or prescribe for any human disease, pain, injury, deformity, or physical condition.

The exception to which this definition calls attention, so far as it affects the case at issue, is worded as follows:—

> This article shall not be construed to affect the practice of the religious tenets of any church.

It will be seen at once that the definition quoted, without the exception referred to, would reasonably include the acts of the "Christian Science healer." The "practice of the religious tenets of any church" is a phrase which, however loosely worded it may be, has obvious applicability to the cult instituted by Mrs. Eddy, as well as to the "Peculiar People," and other sects of the same nature. The learned lawyer who delivered judgment in the New York Court of Appeals would, we gather, have been in favour of upholding the conviction upon the first point—the question of whether there had been "treatment" having been properly left to the jury. The judge in the court below had, however, in the opinion of the Court of Appeals, misdirected the jury by telling them that it was no defence that the defendant acted as he did from any sense of duty or "in the practice of the religious tenets of the Christian Science church." The omission to leave to the jury the question whether the defendant was in good faith practising the tenets of a church would appear to have been considered insuperable, the judgment of the court below was reversed and a new trial ordered. The result arrived at is regrettable; it possibly leaves Christian Scientists in the State of New York to carry on their silly and dangerous practices without interference, though no such result was intended.

Inquests and Post-mortem Examination.

An inquest recently held at Southwark by Dr. F. J. Waldo afforded an instructive example of the value of thoroughness in post-mortem examination where foul play may be suspected, or in any case in which it is possible that such suspicion may arise. The inquest in question was held upon the body of a woman 50 years of age who was found by a carman lying in the roadway close to his horses and between them and the pavement after he had had a collision in the dark with a barrow. If his evidence was correct, and there is no ground for doubting this, he had not run over her, but she had been lying there before he pulled up his horses and got down from his seat. Post-mortem examination made by the house surgeon of the hospital to which the woman was taken, and in which she died next morning, disclosed fractured ribs, a blackened eye, and a broken tooth. She had said something about being stabbed when first raised from the ground; but also when in the hospital had intimated that she had been knocked down by a cart. The house surgeon, however, when making the post-mortem examination observed marks on her neck, which appeared to him to be such as might have been made by the fingers of a person's right hand, and in particular he deposed to an oval mark which he ascribed to the pressure of a thumb, making the suggestion that the deceased had been garrotted by a person who seized her in front with his right hand and struck her with the other. This strongly suggested a case of murder or manslaughter, although a constable who was stationed a few yards away had heard nothing, and there were no traces of a struggle. The inquest, however, was adjourned, and a further post-mortem examination was made by Dr. B. H. Spilsbury in the presence of the house surgeon who made the original one and of Dr. R. Larkin, metropolitan police surgeon. This put an entirely different complexion upon the matter. Dr. Spilsbury deposed at the adjourned inquest that the marks, which it had been suggested were finger-marks on the right-hand side of the neck, were post-mortem stains, there being no extravasation of blood discoverable upon section, as there would have been if pressure during life had caused them. The mark believed to be a thumb-mark had, according to Dr. Spilsbury, been made before death, but was ascribed by him to the woman having been run over. The second post-mortem examination had shown more ribs to have been broken than the first had revealed, and also that the pelvis was fractured. It was thus made clear that there was at any rate no evidence from the injuries indicating the commission of a crime, and the coroner directed the jury that evidence as to how the woman came to be run over was equally absent, with the result that an open verdict was returned, the carman who found the injured woman being specially exonerated from blame. The coroner and the pathologist are to be congratulated upon having arrived at a correct result where an error might easily have been made. If a verdict of manslaughter had been returned or of murder against a person unknown, it would have been the duty of the police to discover the associates of the woman or anyone who might have been seen with her on the evening when she was injured, and a very serious, but undeserved, charge might have been launched.

KING EDWARD'S HOSPITAL FUND FOR LONDON: STATISTICAL REPORT FOR 1915.—This report deals with the ordinary expenditure of 109 London hospitals which collectively provide 10,942 beds in daily occupation. The war has, of course, added considerably to the demand made upon the various institutions, and the number of beds occupied averaged 1176 more than in pre-war times. The in-patients numbered 157,510, and out-patients 1,333,706. Of the 157,510 in-patients, 28,645 were naval or military patients. The 1202 beds occupied by the naval and military patients were taken from those previously used by civilians, the remaining 1176 beds for war patients being provided for by an increase in the total accommodation at the hospitals. The total ordinary expenditure of the 109 hospitals during the year amounted to £1,342,127. The receipts in aid of the expenditure on naval and military patients amounted to £150,920, leaving £1,191,207 to be met out of the normal sources of hospital revenue. The report emphasises the imperative need for increased public support of the hospital funds.

Obituary.

ROBERT LAFAYETTE SWAN, F.R.C.S. IREL.,

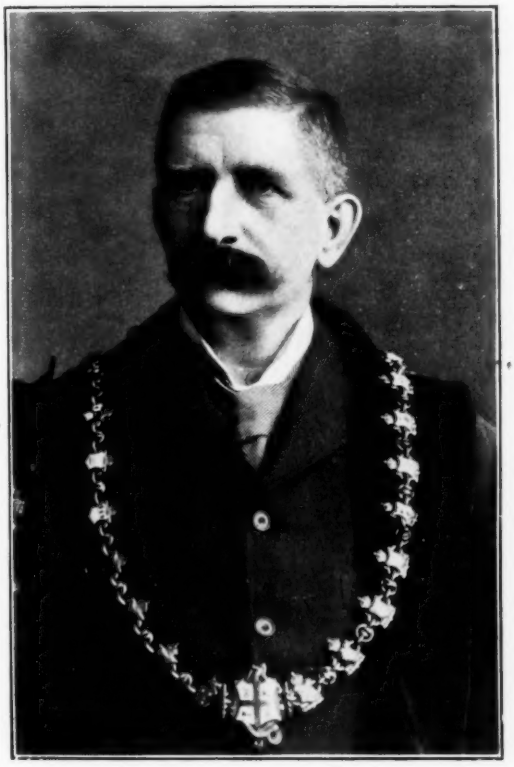
SURGEON, STEEVENS' HOSPITAL, ORTHOPÆDIC HOSPITAL, AND SIMPSON'S HOSPITAL, DUBLIN; EX-PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

IT was with sincere regret that we recorded last week the death on Nov. 4th of Robert Lafayette Swan, who for more than half a century had been in active work as a surgeon in Dublin.

Robert Swan was born on April 27th, 1843, at Durrow, Queen's County, where his father, John Wright Swan, was at that time dispensary medical officer. He was educated at the Kilkenny College and Tipperary Grammar School, which then enjoyed a high reputation, and in 1859 entered the medical school of Steevens' Hospital, beginning the study of anatomy under Edward Hamilton, with whom he formed a life-long friendship. His career in the school was one of exceptional brilliance, and at the termination of the session, 1862–63, he won the Senior Cusack Medal and the Senior Surgical Clinical Prize. In June, 1863, at the age of 20, he was admitted as a Licentiate of the Royal College of Surgeons in Ireland, and on attaining the age of 21 received the Licence of King and Queen's College of Physicians.

Immediately after he had obtained his qualification from the College of Surgeons the School Committee at Steeven's Hospital "unanimously resolved that Mr. Robert L. Swan, on account of his distinguished career as a student of the hospital, be recommended to the board for the office of curator of the Museum." That this was no formal resolution, but a real testimony to the appreciation of Swan's worth, is shown by the fact that no similar resolution regarding a student is recorded in the minutes of the Committee. He relinquished the office of curator on his appointment as resident surgeon of the hospital in 1867, but was re-appointed two years later, on the completion of his resident post.

In 1868 he was elected a Fellow of the Royal College of Surgeons in Ireland. He took a house near Steevens' Hospital, and with a colleague opened class-rooms as a medical tutor. About this time he was appointed assistant surgeon to the Royal Irish Constabulary, and surgeon to the Great Southern and Western Railway Company. In 1873 he was appointed lecturer on descriptive anatomy in the Steevens' School, and there continued teaching till 1877, when he was appointed a member of the Court of Examiners in the Royal College of Surgeons.



ROBERT LAFAYETTE SWAN, F.R.C.S. IREL.,
EX-PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

Early in his career Swan became interested in the subject of orthopædic surgery, of which at that time Stromeyer of Erlangen, Liston of London, and Sayre of New York were the chief exponents. He recognised that facilities for special study and treatment were not available in the general hospitals of Dublin, and set himself to supply this want. With the aid of friends he opened in 1876 a small hospital in his house on Usher's Island for the exclusive treatment of orthopædic patients. As companions he associated with himself some of his contemporaries and teachers at Steevens' Hospital, and of this staff he was always himself the leading spirit. The work done was so good, and the need of it so great, that the accommodation in the house on Usher's Island soon became quite inadequate. In 1883 the hospital was moved to larger quarters in Great Brunswick-street, and again in 1902 to its present site in Upper Merrion-street, where at present the daily average number of beds occupied is over 70. The Incorporated Orthopædic Hospital of Ireland stands to-day as a splendid monument to the life and work of its founder, Robert Swan.

Though pre-eminently an orthopædic surgeon, Swan's activities were by no means confined to that branch of his practice. On March 25th, 1891, he was appointed visiting surgeon to Steevens' Hospital, and in 1898 and 1899 the Fellows of the Royal College of Surgeons in Ireland elected him President of their College. At Steevens' Hospital for 25 years he occupied the leading position on the surgical staff. His sound knowledge of anatomy and general pathology, combined with his great clinical experience, seemed to give him an almost intuitive power in coming to a diagnosis of surgical ailments. Though he often appeared to rely entirely on this power, he was always ready to call to his aid all those methods of clinical investigation which have resulted from scientific research. He was a rapid and resourceful operator, and though at times his methods appeared to be rough he was well able to carry out the most delicate surgical manipulations. The excellence of the results that he obtained sometimes surprised those who did not recognise the knowledge that guided his actions. In 1894 he published a short manual on "Diseases and Deformities of the Spine," and besides this he contributed many papers to the Transactions of the Royal Academy of Medicine in Ireland, the *Dublin Journal of Medical Science*, and other periodicals. These writings, though valuable as the result of a carefully observed experience, represent but a small part of his professional work, the greater part of which is preserved as an oral tradition among his many pupils.

The personal character of Swan was striking. His most obvious characteristic was strength, both physical and mental. He was never daunted; having made up his mind on any course of action, he pursued it with determination, whether in the operating-theatre, the hunting-field, or the pursuits of daily life. Though a delightful and interesting companion he was not a talker, his opinions when expressed being the result of thought. He seemed absolutely to ignore criticism of himself, as was well exemplified in the early history of the Orthopædic Hospital, when he was wrongly accused of working for his own advertisement and not in the cause of science; and while ignoring criticism of himself he was sparing of his criticism of others. As a friend he was always ready with assistance and with advice founded on his wide experience of men and matters. Though he never sought popularity or appeared to value it in the least, he won the respect and love of his pupils and friends by his sterling worth and invariable courteousness.

To the very last he retained his receptiveness of mind and in his later years became a great traveller. He married in 1868 the widow of Judge Teed, who predeceased him by several years. He leaves an only son, Lieutenant-Colonel John Stewart Swan, an officer in the Indian Army.

THE SERVICES.

ARMY MEDICAL SERVICE.

Lieut.-Col. John C. Connor to be temporary Colonel whilst employed as Assistant Director of Medical Services of a base.

Temp. Hon. Lieut.-Col. C. G. Watson, C.M.G., to be temporary Colonel whilst employed as Consulting Surgeon.

Temp. Hon. Capt. P. T. Crymble, having ceased to be employed with the St. John Ambulance Brigade Hospital, relinquishes his commission.

TERRITORIAL FORCE.

Capt. S. J. Fielding, East Anglian Field Ambulance, to be Deputy Assistant Director of Medical Services, East Anglian Division.

ROYAL ARMY MEDICAL CORPS.

Major G. R. Philip, C.A.M.C., to be temporary Lieutenant-Colonel.

Major A. G. P. Gipps to be temporary Lieutenant-Colonel while commanding troops on a hospital ship.

Fleet Surgeon G. E. Macleod, R.N., retired, to be temporary Major.

Captains to be temporary Majors: T. D. Archibald and T. A. Lomer.

Temporary Captains to be temporary Majors whilst commanding troops on a hospital ship: W. H. Allen, N. Duggan, J. D. Gimlette, W. J. Gow, J. H. Jones, R. H. Jones, H. R. L. Joy, G. W. Milne, C. C. Morrell, and A. E. Seller.

Temporary Lieutenants to be temporary Captains: J. W. Burns, H. Barr, W. Hamilton, J. L. Gregory, A. J. Brock, T. W. Jackson, and R. J. Gordon.

To be Temporary Captains: Capt. A. Arthur, C.A.M.C., Sir Vincent Nash, J. H. Parsons, Capt. J. Hendry (from Glasgow University Contingent, O.T.C.), and Temp. Lieut. J. A. Matson.

To be temporary Lieutenants: H. T. H. Butt, P. A. Creux, T. Gardner, F. N. Marsh, W. P. Morgan, H. Ainscow, H. C. Burbidge, V. F. Krœnig-Ryan, M. F. Hession, T. St. C. Smith, J. L. Rubidge, J. C. Lee, D. K. Parkes, E. Denison, E. V. Dunkley, P. A. Hall, C. L. McDonogh, E. Lachopelle, W. J. Weaver, J. T. Bowman, R. Paterson, M. H. Cane, W. Craig, A. G. Wilkins, J. F. Adamson, Temp. Hon. Lieut. D. O. Richards, B. S. Hyslop, H. T. Howell, H. G. K. Young, T. S. Robson, E. A. Donaldson-Sim, L. C. G. Bacon, W. J. Greehy, S. W. Fisk, and J. B. Wood.

William King Carew to be temporary honorary Major whilst employed at the Dublin Castle Red Cross Hospital.

Temp. Hon. Lieut. R. J. C. Douty to be temporary honorary Captain whilst employed with No. 2 British Red Cross Hospital.

C. G. Hitchcock to be temporary honorary Lieutenant whilst serving with the British Red Cross Hospital, Netley.

The following relinquish their commissions: Temp. Major H. Lett. Temporary Captains: C. H. Denham, D. W. Woodruff, G. G. Bartholomew, E. H. Lawson, and A. C. D. Firth (on account of ill-health). Temporary Lieutenants: E. H. Alton, C. W. Sharp, and H. C. Wimble (on account of ill-health).

SPECIAL RESERVE OF OFFICERS.

Captains to be Temporary Majors whilst commanding troops on a Hospital Ship: R. M. Beath and H. C. Sinderson.

To be Lieutenants: J. W. Hyatt, H. D. Gardner, E. B. Hickson, R. T. Lewis, O. Williams, C. Y. Roberts, J. R. Banks, P. R. Riggall, C. V. Braimbridge (from University of London Contingent, O.T.C.), C. E. Hopwood (from Manchester University Contingent, O.T.C.), W. Agar (from Birmingham University Contingent, O.T.C.), N. B. B. Fleming (from St. Andrews University Contingent, O.T.C.), J. E. Bannen, J. Beveridge, A. La B. Clark, R. Cunningham, J. MacA. Mackintosh, J. Stirling. From Glasgow University Contingent, O.T.C.: H. D. Brown, W. M. Cameron, J. Crerar, W. Donald, G. M. Hetherington, A. R. Hill, T. J. Honeyman, J. N. Jamieson, S. Johnstone, H. E. McColl, D. B. Robertson, J. Steel, H. W. Torrance, and R. N. Walker.

TERRITORIAL FORCE.

East Anglian Field Ambulance: Capt. S. J. Fielding is seconded whilst holding the appointment of Deputy Assistant Director of Medical Services.

East Lancashire Field Ambulance: Lieut. R. J. Chapman to be Captain.

London Sanitary Company: Lieut. J. Chalmers to be Captain.

Highland Casualty Clearing Station: Lieut. W. Alexander to be Captain.

Welsh Field Ambulance: Lieut. J. T. Samuel to be Captain.

Attached to Units other than Medical Units.—Capt. H. Drummond, from T.F. Reserve, to be Captain. Lieut. W. Taylor to be Captain.

TERRITORIAL FORCE RESERVE.

Major J. R. Reid, from Attached to Units other than Medical Units, to be Major.

Capt. S. L. Brimblecombe, from Wessex Field Ambulance, to be Captain.

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following:—Majors to be Lieutenant-Colonels: J. M. Woolley, J. H. Hugo, D.S.O., W. H. Kenrick, R. H. Price, and R. Bryson.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census 7208 births and 4308 deaths were registered during the week ended Saturday, Nov. 18th. The annual rate of mortality in these towns, which had been 12·9, 12·6, and 13·3 per 1000 in the three preceding weeks, fell in the week under notice to 13·0 per 1000 of their aggregate civil population estimated at 17,312,295 persons for the year 1915. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 12·6 per 1000, and was equal to that recorded in London. Among the several towns the death-rate last week ranged from 3·4 in Enfield, 5·8 in Ilford and in Smethwick, 6·4 in Oxford and in Northampton, and 7·4 in Bath and in Wallasey, to 18·6 in Great Yarmouth, 19·5 in Blackpool, 20·0 in Sunderland, 20·9 in South Shields, and 23·3 in Gateshead.

The 4308 deaths from all causes were 107 below the number in the previous week, and included 241 which were referred to the principal epidemic diseases, against 229 and 250 in the two preceding weeks. Of these 241 deaths, 112 resulted from infantile diarrhœal diseases, 56 from diphtheria, 40 from measles, 12 from whooping-cough, 11 from enteric fever, and 10 from scarlet fever, but not one from small-pox. The annual death-rate from these diseases was equal to 0·7, against 0·8 per 1000 in the preceding week. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had declined from 477 to 127 in the nine preceding weeks, further fell to 112, and included 30 in London, 8 in Birmingham, 7 in Liverpool, and 5 each in Sheffield and Leeds. The deaths referred to diphtheria, which had been 53, 39, and 60 in the three preceding weeks, fell to 56; 13 deaths were recorded in London, 4 each in Stoke-on-Trent and Cardiff, and 3 each in St. Helens and Middlesbrough. The fatal cases of measles, which had been 13, 22, and 26 in the three preceding weeks, further rose to 40, of which 9 occurred in London, 4 each in Coventry and Liverpool, and 3 each in East Ham, Birmingham, Birkenhead, and Manchester. The deaths attributed to whooping-cough, which had been 13, 20, and 17 in the three preceding weeks, fell to 12, and included 3 in Birmingham, and 2 each in Hastings and Great Yarmouth. The deaths referred to enteric fever, which had been 11, 5, and 11 in the three preceding weeks, were again 11 last week, and included 2 each in London and Burnley. The fatal cases of scarlet fever, which had been 5, 12, and 9 in the three preceding weeks, numbered 10, of which 3 were registered in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased from 1067 to 1171 in the four preceding weeks, were 1170 on Saturday last; 131 new cases were admitted during the week, against 197, 146, and 157 in the three preceding weeks. The cases of diphtheria numbered 1556, against numbers increasing from 1262 to 1541 in the nine preceding weeks; 193 new cases were admitted during the week, against 231, 186, and 202 in the three preceding weeks. These hospitals also contained on Saturday last 69 cases of measles, 39 of enteric fever, and 35 of whooping-cough, but not one of small-pox. The 1154 deaths from all causes in London were 29 in excess of the number in the previous week, and corresponded to an annual rate of 14·0 per 1000. The deaths referred to diseases of the respiratory system, which had increased from 132 to 201 in the four preceding weeks, further rose to 236 in the week under notice.

Of the 4308 deaths from all causes in the 96 towns, 162 resulted from violence, 359 were the subject of coroners' inquests, and 1284 occurred in public institutions. The causes of 39, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, and in 76 other smaller towns. Of the 39 uncertified causes, 15 were registered in Liverpool, 6 in Birmingham, 3 in South Shields, and 2 each in Dudley, St. Helens, and Darlington.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,372,000 persons at the middle of this year 942 births and 657 deaths were registered during the week ended Saturday, Nov. 11th. The annual rate of mortality in these towns, which had been 13·0, 12·9, and 13·9 per 1000 in the three preceding weeks, rose to 14·5 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 13·8, against a corresponding rate of 12·6 per 1000 in the large English towns. Among the several towns the death-rate during the week ranged from 6·9 in Clydebank, 9·3 in Ayr, and 10·0 in Perth, to 20·0 in Hamilton, 20·1 in Greenock, and 21·0 in Kilmarnock.

The 657 deaths from all causes were 24 above the number in the previous week, and included 38 which were referred to the principal epidemic diseases, against 53 and 51 in the two preceding weeks. Of these 38 deaths, 13 resulted from infantile diarrhœal diseases, 8 from measles, 6 from scarlet fever, 5 each from diphtheria and whooping-cough, and 1 from enteric fever, but not one from small-pox. The annual death-rate from these diseases was equal to 0·8 per 1000, and coincided with that recorded in the large English towns. The deaths of infants (under 2 years), which had declined from 66 to 18 in the five preceding weeks, further fell to 13, of which 8 occurred in Glasgow and 3 in Aberdeen. The deaths referred to measles, which had been 2, 18, and 11 in the three preceding weeks, fell to 8, and included 6 in Dundee. The 6 fatal cases of scarlet fever were slightly in excess of the average in the earlier weeks of the quarter, and included 4 in Glasgow. The deaths attributed to diphtheria, which had been 12, 4, and 10 in the three preceding weeks, fell to 5, of which 2 were registered in Edinburgh. The 5 deaths referred to whooping-cough were 2 in excess of the average in the earlier weeks of the quarter, and included 2 in Glasgow. The fatal case of enteric fever occurred in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 74, 87, and 95 in the three preceding weeks, further rose to 107 in the week under notice, but were 59 below the number registered in the corresponding week of last year. The deaths from violence numbered 37, against 30 and 25 in the two preceding weeks.

In the 16 largest Scotch towns 948 births and 634 deaths were registered during the week ended Saturday, Nov. 18th. The annual rate of mortality, which had been 12·9, 13·9, and 14·5 per 1000 in the three preceding weeks, fell to 13·9 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 13·8, against a corresponding rate of 12·6 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 9·2 in Falkirk, 10·9 in Ayr, and 11·5 in Paisley, to 18·8 in Greenock, 19·4 in Dundee, and 19·5 in Coatbridge.

The 634 deaths from all causes were 23 below the number in the previous week, and included 47 which were referred to the principal epidemic diseases, against numbers declining from 92 to 38 in the six preceding weeks. Of these 47 deaths, 18 resulted from infantile diarrhœal diseases, 9 from measles, 8 from diphtheria, 5 each from enteric fever and whooping-cough, and 2 from scarlet fever, but not one from small-pox. The annual death-rate from these diseases was equal to 1·0, against 0·7 per 1000 in the large English towns. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had declined from 66 to 13 in the six preceding weeks, rose to 18, and included 8 in Glasgow and 3 in Clydebank. The deaths referred to measles, which had been 18, 11, and 8 in the three preceding weeks, were 9 last week, of which 5 were registered in Dundee and 2 in Glasgow. The fatal cases of diphtheria, which had been 4, 10, and 5 in the three preceding weeks, rose to 8, and included 2 each in Edinburgh and Aberdeen. The 5 deaths from enteric fever were 2 in excess of the average in the earlier weeks of the quarter, but showed no excess in any town. The deaths attributed to whooping-cough, which had been 3, 4, and 5 in the three preceding weeks, were again 5 last week, and included 2 in Glasgow. The fatal cases of scarlet fever were recorded in Edinburgh and Greenock.

The deaths referred to diseases of the respiratory system, which had increased from 74 to 107 in the four preceding weeks, further rose to 118 in the week under notice, but were 59 below the number registered in the corresponding week of last year. The deaths from violence numbered 38, against 25 and 37 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the registration area of Dublin 173 births and 135 deaths were registered during the week ended Saturday, Nov. 18th. The annual rate of mortality, which had been 18·7, 15·9, and 21·3 per 1000 in the three preceding weeks, fell to 17·7 in the week under notice, against corresponding rates of 14·0 and 13·6 per 1000 in London and Glasgow respectively.

The 135 deaths at all ages included 23 of infants under 1 year and 33 of persons aged 65 years and upwards. Three deaths (of infants under 2 years) were referred to diarrhœa and enteritis, and 1 each to enteric fever and diphtheria. The causes of 7 deaths were uncertified, and those of 6 others were the subject of coroners' inquests, while 55, or 41 per cent., of the total deaths occurred in public institutions.

During the same period 144 births and 105 deaths were registered in the city of Belfast. The deaths were equal to an annual rate of 14·0, or 0·6 per 1000 less than that in the previous week, and included 14 of infants under 1 year and 24 of persons aged 65 years and upwards. Four deaths (of infants under 2 years) were referred to diarrhœa and enteritis, and 1 each to scarlet fever and whooping-cough. The cause of 1 death was uncertified, while those of 9 others were the subject of coroners' inquests, and 27 of the total deaths occurred in public institutions.

Correspondence.

"Audi alteram partem."

THE DIFFERENTIATION OF HEART MURMURS IN SOLDIERS.

To the Editor of THE LANCET.

SIR,—The letters of Professor D. Drummond (THE LANCET, Nov. 4th) and of Dr. Kinsey-Morgan (Nov. 18th) draw attention to an interesting fact—namely, the disappearance of some cardiac murmurs under pressure. For many years this has been evident to me. The explanation of the disappearance of the murmurs with which I have satisfied myself may reveal my ignorance of the physics of sound, but I have believed that I have been right in thinking that pressure may abolish some of the vibrations producing the lower tones of sound, while the vibrations of higher-pitched tones withstand the pressure.

It used to be customary for some physicians of the older school to express the opinion that the binaural stethoscope produces sounds which are not in existence, and that the only stethoscope to be relied upon is the old wooden one. The explanation of this opinion appears to me to be that it is virtually impossible not to apply pressure when using the wooden stethoscope, and that consequently murmurs which disappear under pressure are abolished. Because the murmurs could not be heard through the wooden stethoscope, those who only used this stethoscope thought that the murmurs did not exist. By the exertion of pressure it is particularly easy to cause the added sound of the heart, sometimes called the "third sound"—i.e., the middle of the sounds which form part of the "bruit de galop"—to disappear. I used to take cardiographic tracings in cases where this sound was present. When the added sound is well marked its position is indicated by a very distinct wave on the cardiographic tracing, but in order that the wave should appear there must be very slight pressure of the recording button upon the impulse of the heart. The presystolic murmur often appears to be a medley of sounds, some of which may be very closely allied to a "bruit de galop" in character, and the medley of sounds, as Professor Drummond notes, may be altered by pressure.

On one point I feel that I must dissent from Dr. Kinsey-Morgan—i.e., from the opinion that exocardial murmurs are abolished by pressure. There is a short, harsh exocardial murmur not uncommonly heard which is apparently—but not in reality—increased by pressure. The murmur is apparently intensified, because some of the lower tones of the normal sounds of the heart are abolished by the pressure, and the harsh murmur, relieved from competition with some other tones, appears to be louder. The production of some functional murmurs seems to be obscure. Like Professor Drummond, I believe them to be endocardial. They also seem to me to be almost invariably lower pitched than organic murmurs, and consequently more easily abolished by pressure. Occasionally, however, as I have proved by looking up cases two or three years after they were first seen, a murmur sufficiently harsh to have been thought to be organic may disappear.

I am, Sir, yours faithfully,

Norwich, Nov. 18th, 1916. THEODORE FISHER.

THE ETHICAL STANDARDS OF PANEL PRACTICE.

To the Editor of THE LANCET.

SIR,—One must be careful in fixing ethical standards for medical practice not to identify them with any particular system which may be in vogue. Ethical standards are ingrained in the individual and are reflected by his work. It is of no use to fix them in the work and hope that they may permeate the individual. A parish doctor in a village may be a model to a hospital physician as far as ethics are concerned. The first lesson to be learned is to respect and trust one another, and what system of medical practice, even if backed up by the might of a British Parliament, will ever infuse that elementary truth into our composition? Diatribes on medical ethics were not unknown in pre-panel days, and there were many towns where the sharp competitive practices of some medical men not only lowered the practice of medicine as a whole, but completely alienated one practitioner from the other.

To say that the best qualified men do not always get the biggest panels is as inane as to say that the cleverest student does not always come out first in his examination; and one is entitled to derive what consolation one can from that reflection. Surely tact, polish, worldly wisdom, knowledge of human nature are assets quite as valuable as a large panel list. If medical men would only use their constructive talents to improve the panel system instead of clamouring for something they know nothing about, we might hope for the evolution of a medical service agreeable and useful to all. The panel system was evolved by the best brains of the profession, and if that system is to be changed let us have solid reasons for the change, and still more solid ones for suggesting another in its place.

I can imagine nothing more objectionable than a whole-time State service which binds a medical man to a certain number of patients, for some of whom he may have no sympathy, and to some of whom his advice and treatment may seem worthless and dangerous. We revert to the parish and club system again, but call it a State system. Before we laud the methods of the regimental medical officer would it not be well that they should be put in the crucible of a Royal Commission just as the Poor-law Service was. If they emerge pure and unimpeachable let us have them by all means. But no Government, I am sure, will lend its countenance to a system which has to be maintained by the public purse, which will convert the consulting-room into barracks where the sick will be paraded and the malingerers ejected, merely to raise the standard of medical ethics.

I am, Sir, yours faithfully,

Exeter, Nov. 14th, 1916. J. A. W. PEREIRA.

GRAVES'S DISEASE AND ELECTRICAL TREATMENT.

To the Editor of THE LANCET.

SIR,—The address by Dr. Hector Mackenzie to the Royal College of Physicians of London, which appears in your issue of Nov. 11th, is peculiarly welcome to those of us whose work lies in the application of X rays and electricity in medicine. A short time ago I read a lengthy address on the subject of Graves's disease by a distinguished physician in which radiation treatment was not even mentioned.

I note that Dr. Mackenzie was not favourably impressed with the results of the X ray treatment of his own cases in former years. One notices, in examining the records, that small doses were given at intervals of seldom less than a week, and often longer. Nothing is said as to the quality of the rays; quite possibly they were soft or medium only. The treatment seems to have dragged on for six months, a year, or more. My personal experience is that the bulk of what can be done by X rays can be done in three months, often less. But to get rapid results doses must at first be given at frequent intervals—not less than three times a week, and in very acute cases daily. Hard rays filtered through 2 mm. of aluminium should be used, and it is never necessary to produce more than a slight brownish discolouration of the skin. Causes of failure are the existence of mental distress or physical pain; long and tiring journeys to receive treatment often nullify its effects. Dr. Florence Stoney rightly lays stress upon the retarding effects of constipation and dental trouble. When the disease is associated with mental obsession or where it has originated owing to trying circumstances which are no longer operative, hypnotic treatment should be combined with that by X rays. It is unlikely to help when the surroundings remain bad.

I have lately associated cerebral galvanism with X ray treatment, with most beneficial results. It has a remarkably soothing and steadying effect on the nervous system in such cases. The positive pole is placed over the forehead and the negative on the back of the neck, and the patient holds a long bar covered with lint in *both* hands. Cerebral galvanism is a most valuable procedure in many nervous disorders, but it is extremely dangerous in unskilled hands.

Dr. Mackenzie remarks that X rays seem to fail in acute and severe cases. This is not always so, as the following case demonstrates.

A. C., a chief draughtsman in an important railway centre, became acutely ill after a long period of overwork. His pulse became almost uncountable, his eyes prominent, and he had violent tremor. He was soon unable to leave his bed, and continued to go downhill. A consulting physician who was called in gave him only a few days to live. His own medical attendant, believing that he could be made no worse, had him carried on a stretcher to my consulting-room. He was given small doses of hard rays *daily* for a fortnight, at the end of which time he was able to come in a cab, and to walk in and out with assistance. Two months later—having had in all 30 doses—he returned to his duties. His pulse was 80 and steady. There was no tremor. Exophthalmos persisted to a considerable extent, and the thyroid, which had never been much enlarged, was not visibly altered in size. This was five years ago. Two years ago, when I last heard of him, he was still at work and in good health.

Since then I have more than once taken an X ray apparatus into a private house when the patient has been acutely ill. I have seen it stated that X rays are unsuited for the acutely ill on account of the noise, but the old platinum break must have been in mind. A modern portable outfit is silent. When there is electric light in the house the difficulties are not great, but even if accumulators must be used treatment can be carried out, though the exposures will have to be of considerable length. Dr. Mackenzie puts the death-rate from Graves's disease at 25 per cent.—a terrible figure. I feel certain that the bedside application of X rays in the early stages of acute exophthalmic goitre would save many lives.

I am, Sir, yours faithfully,

Cavendish-square, W., Nov. 14th, 1916. F. HERNAMAN-JOHNSON.

ENTERIC AND TYPHOID: A POINT IN NOMENCLATURE.

To the Editor of THE LANCET.

SIR,—My attention has been called to a letter published in THE LANCET of April 15th, in which Dr. E. W. Goodall suggests that the term "enteric" should be used to cover the three infections—typhoid, paratyphoid A, paratyphoid B, and the term "typhoid" be restricted to cases of infection by the Eberth-Gaffky bacillus. While completely agreeing with Dr. Goodall, I would point out that this nomenclature was adopted by Dr. Chalmers and myself, in 1913, in the second edition of our "Manual of Tropical Medicine" (p. 1046).

I am, Sir, yours faithfully,

ALDO CASTELLANI,

Rome, Oct. 26th, 1916. Surgeon-Major, R.I.N.

THE USE OF SUGAR.

To the Editor of THE LANCET.

SIR,—Would it not be well, now that food is so dear, if the medical profession issued an authoritative statement on the subject of dietetics, regarding which so much ignorance prevails? Take the case of sugar. A mother has recently written to a daily paper complaining that she cannot get enough sugar for her children's porridge, wholly ignorant that this food contains an abundance of carbohydrate, all of which enters the blood as sugar; and that the proper addition to it is not sugar but salt, as every wise Scot's son doth know. Neither the Government nor the public realise that sugar as such is not an essential ingredient of human food after the period of lactation. We spend 22 millions yearly on sugar. One-half of this might comfortably be saved. Had I my way I would long ere this have closed down the entire sweetstuff industry and devoted its immense resources to the manufacture of sorely needed equipment and munitions.—I am, Sir, yours faithfully,

Wimpole-street, W., Nov. 14th, 1916. HARRY CAMPBELL.

The War.

THE CASUALTY LIST.

THE following names of medical officers appear among the casualties announced since our last issue :—

Killed.

Capt. J. D. Forrester, R.A.M.C., was educated at George Watson's College, Edinburgh, and qualified M.B., Ch.B. Edin. in 1912. He had held the appointment of senior house surgeon at Rochdale Infirmary, and joined the R.A.M.C. on the outbreak of war, receiving his captaincy in February this year.

Lieut. G. W. Guthrie, R.A.M.C., qualified M.B., Ch.B. Edin. in 1900, and was at one time obstetric house physician and house surgeon at the Middlesex Hospital. Later he practised at Tunbridge Wells, and then went to Lima, Peru, and joined the R.A.M.C. in May this year.

Surgeon C. H. Gow, R.N., was educated at Cambridge University and at St. Bartholomew's Hospital, and qualified in 1915, and thereupon took up the appointment of a temporary surgeon in the Royal Navy.

Died.

Lieut.-Col. C. S. Rundle, I.M.S. (retired). (See Obituary of the War in next column.)

Major C. H. Benham, R.A.M.C., was educated at Queen Elizabeth's School, Ipswich, and at London University, and was a student at University College Hospital, London, qualifying in 1897. Prior to the war he was in practice at Brighton, and held several appointments in the district and in the county, and had been attached to the R.A.M.C. (T.F.) for some years. He was on his way home invalided from Salonica, and died at Malta.

Lieut.-Col. H. K. Bean, Australian Army Medical Corps, qualified at Edinburgh University in 1881, and was in practice at Mossley, Lancs, for a few years. He afterwards went out to Australia, where he practised at Wallsend, New South Wales, and served with the N.S.W. contingent in the South African War. On the outbreak of the present war he went with the Australian Forces to Egypt, and was invalided to England. Later he went to France on special duty, and subsequently returned to Egypt, where he died.

Capt. A. Groenwald, M.C., South African Medical Corps.

Wounded.

Lieut. G. C. Linder, R.A.M.C., attached Royal Field Artillery.
Capt. J. T. Heffernan, R.A.M.C., attached Duke of Cornwall's Light Infantry.
Capt. J. Sainsbury, R.A.M.C.
Capt. H. St. A. Agate, R.A.M.C., attached S. Wales Borderers.
Surgeon F. B. Eykyn, R.N.
Lieut. G. Arthur, R.A.M.C., attached Bedford Regiment.
Capt. H. E. P. Yorke, R.A.M.C., attached East Yorks Regt.

Previously reported Prisoner in German hands, now reported Released.

Capt. H. Kay, South African Medical Corps.

Previously reported believed taken Prisoners at Kut-el-Amara, now reported Prisoners of War.

Lieut. N. S. Jatar, I.M.S.
Lieut. R. V. Martin, I.M.S.
Capt. K. K. Mujesji, I.M.S.
Lieut. N. R. R. Ubhaya, I.M.S.

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following sons of medical men must be added to our lists of those who have fallen during the war :—

Lieut. F. H. Stewart Caiger, 92nd Battery Royal Field Artillery, only son of Dr. F. F. Caiger, of the South-Western Fever Hospital, Stockwell, London. Lieut. Caiger was in his second year at Caius College, Cambridge, when he joined, and had already commenced his medical studies.

Second Lieut. W. M. Clarke, Royal Engineers, younger son of Professor J. Michell Clarke, of Clifton, Bristol.

Second Lieut. K. B. Stuart, Durham Light Infantry, only son of Dr. R. Stuart, of Durham.

Second Lieut. K. P. L. Williams, Welsh Regiment, only son of Dr. W. L. O. Williams, of Llanrug, near Carnarvon.

Major C. H. Benham, R.A.M.C., son of Dr. H. J. Benham, of Ollon, Vaud, Switzerland.

Lieut. H. C. D. Buchanan, Middlesex Regiment, son of Dr. L. Buchanan, of Arvagh, co. Cavan, Ireland.

Capt. L. O. Habershon, East Yorkshire Regiment, youngest son of the late Dr. S. H. Habershon, of Harley-street.

Second Lieut. T. S. Woods, Royal Field Artillery, eldest son of Sir R. H. Woods, late President of the Royal College of Surgeons, Ireland.

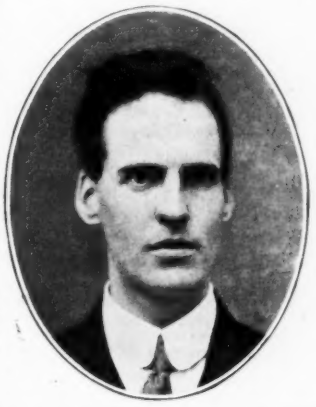
Second Lieut. R. H. Boys, Bedfordshire Regiment, youngest son of Dr. A. H. Boys, of St. Albans, Herts.

OBITUARY OF THE WAR.

ALFRED THOMAS LOGAN, M.B., CH.B. GLASG.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain A. T. Logan, who was killed on active service on Sept. 16th (and at first reported "Missing"), was 28 years of age and second son of Thomas Logan, of Strathbungo, Glasgow. He was educated at Glasgow University, where he gained a Dr. Gibson bursary, and was resident at the Western Infirmary and the Eastern Hospital before graduating with distinction in surgery in April, 1915. Obtaining a commission at once in the Royal Army Medical Corps, he trained at Eastbourne and went out three months later attached to the Grenadier Guards, and saw much heavy fighting during his 14 months of service, for which he was mentioned in despatches.



Captain Logan's wish was to become a medical missionary, and it was in this mould that his energies were cast. At Glasgow he was President of the Christian Endeavour Society and of the Young Men's Guild, and was active in the social work of the Lodging House Mission. His early death cuts short a life of promise.

WILLIAM HENRY EDMUNDS, L.M.S.S.A. LOND.,

SURGEON, ROYAL NAVY.

Surgeon W. H. Edmunds, who died at the Western Infirmary, Glasgow, on Oct. 4th, at the age of 27, was the only son of J. L. Edmunds, of Chepstow, Mon. He was educated at West Monmouth School, Pontypool, and University College, Cardiff, where he passed the Second M.B. Examination, and then entered St. Mary's Hospital with an open University Exhibition. He qualified in 1913, was for a time assistant to Dr. T. E. Mitchell at Old Hill, Staffs., and was then appointed medical superintendent of the Birmingham City Hospital at West Heath. This appointment he resigned to join the Navy as a temporary Surgeon at the end of 1915. After some experience at naval bases he became medical transport officer to a naval ambulance train, and contracted while performing his duties there blood poisoning, from which an operation failed to save him.

Surgeon Edmunds was a keen athlete. At Cardiff University he won his cap at water polo and football, and will be remembered as a fine Rugby football player. Generous in mind and brave in body, his personal qualities made him popular with his fellow students, while his chief writes of him as a loyal colleague and pleasant companion, well up on the scientific side of his profession. Surgeon Edmunds was recently married.

CUBITT SINDALL RUNDLE, M.B., C.M. EDIN.,

LIEUTENANT-COLONEL (RETIRED), I.M.S.

Lieutenant-Colonel C. S. Rundle died at Jersey on Nov. 11th. The deceased was a member of the Indian Medical Service, and on his retirement some ten years ago

took up, with his family, his residence in Jersey. Upon the outbreak of the war he at once offered his services to the War Office, and received eventually the appointment of medical officer in charge of the local prisoners of war camp. He continued in the active performance of the duties of that position until his death, which occurred with painful suddenness from a heart affection. Lieutenant-Colonel Rundle, who was 62 years of age, was for some time the honorary secretary of the Jersey Choral Society, being himself a musician of considerable ability. He was a highly respected and esteemed resident in the island, and his death has called forth numerous expressions of sincere regret. He leaves a widow, a son, and a daughter to mourn their loss. One son, an officer in the Army, was killed at Gallipoli about a year ago. Among the many floral tributes laid upon the coffin was a beautiful wreath sent by the German prisoners of war.

THE HONOURS LIST.

The name of the following officer, who is engaged in the war in a combatant capacity, was omitted from the list published in THE LANCET last week:—

Distinguished Service Order.

Major (temp. Lieut.-Col.) Lewis Leslie Clayton Reynolds, Oxford and Bucks Light Infantry.

For conspicuous gallantry in action. He handled his battalion with great skill and determination. On two separate occasions his good leading has achieved important success.

MENTIONED IN DESPATCHES.

In a despatch received from Lieutenant-General Sir Percy Lake, K.C.B., dealing with the operations in Mesopotamia subsequent to April 30th, 1916, and dated August 27th, 1916, the following references to the Medical Services appear:—

In my previous despatch I alluded to the difficulties against which the Medical Services have had to contend.

Much thought and hard work have been devoted to overcoming these difficulties and meeting the medical needs of the force. The advance made in this direction is clearly shown by the fact that the total accommodation for sick and wounded in Mesopotamia, which on Jan. 21st (exclusive of Kut) was 4700 beds, and by May 13th had risen to 9425, amounted on July 1st to 15,745, with 2700 more in process of organisation.

The advent of the hot weather early in May, with a sudden rise in the temperature, increased the number of sick rapidly. The intense heat was aggravated at the front by the total absence of shade and by the failure of the "shamal" or north wind, which, usually due about the middle of June, did not commence to blow till July 19th. The admissions to hospital then at once lessened, and are still decreasing. The majority of the cases are not serious.

An outbreak of cholera occurred at the Tigris front at the end of April, but was got under control in the course of a short time, since when only a small number of isolated cases are reported from time to time from various parts of the country.

I am much indebted to Surgeon-General F. H. Treherne for the valuable asistance he has consistently rendered since his arrival in the country; also to Colonel W. H. Willcox, consulting physician, whose high profe-sional knowledge has always been at the service of the force. Much credit is due to the nursing sisters, who have carried out their duties with great devotion, and have shown untiring zeal and energy in alleviating the sufferings of those who have passed through their hands.

By the untimely death of Colonel Sir V. Horsley both the force and the medical profession sustained a severe loss.

A large amount of hutting for hospitals and troops has been erected, providing accommodation for 8700 sick and 15,000 troops; water-supplies for the troops have been installed at Basrah and Amarah, and many important miscellaneous works have been carried out.

The thanks of the whole force in Mesopotamia are especially due to the Order of St. John of Jerusalem, the British Red Cross Society, including its Indian branch, and the Young Men's Christian Association.

The two former, through their representative, Lieutenant-Colonel J. Gould, have devoted their resources to supplementing the medical appliances and comforts provided by the State for the care of the sick and wounded. All officers and men who have passed through the hospitals at any time would desire to express their gratitude to these societies.

The names of Brevet-Colonel M. H. Fell, R.A.M.C., and Lieutenant-Colonel S. P. James, I.M.S., are brought to notice in this despatch.

THE INSURANCE OF DISCHARGED SOLDIERS AND SAILORS.

A discharged soldier who has been insured in the Army, subject to certain conditions and provided he remains insured after his discharge, is entitled to medical benefit, sanatorium benefit, maternity benefit, and sickness and disablement benefit. The present conditions of recruiting have filled the ranks of our regiments with men of varying social status, some of whom were insured under the National Insurance Acts before they became soldiers, while others were not. Some of the former class have continued their insurance, while serving, whereas others have not, and some of the latter class have become insured. Some also have long been members of Approved Societies, while others have never joined one. The conditions under which benefits can be obtained therefore necessarily vary, and the Insurance Commissioners have issued a leaflet (29 A) to explain for the benefit of discharged soldiers (including men transferred to the Army Reserve or the Territorial Force Reserve) the steps necessary to be taken in order to obtain the advantages to which they are entitled. Leaflet 29 A will be found useful, not only by soldiers, but by those who from time to time may be asked by discharged soldiers in ill health to assist or advise them.

As disclosed by a recent question in the House of Commons, there seems to be a misapprehension with regard to the attitude of insurance companies towards returned and injured soldiers and sailors who go back to civil employment. As the result of inquiries the War Pensions Statutory Committee are able to state that the companies have been, and are, insuring such men without any addition to the ordinary rate of premium for the trade. The companies are determined to put no obstacle in the way of these men receiving the fullest care and attention on their return.

ARMY SANITATION.

In his lecture at University College, London, last week Lieutenant-Colonel H. R. Kenwood, professor of hygiene in the University of London, paid a very high tribute to the sanitary sections of the Royal Army Medical Corps, which have, he said, earned the name of "handy men in khaki" for their skilful improvisations. Using as their raw material by-products of other departments of the Army in the form of meat, biscuit, or petrol tins, they have obtained results as satisfactory as those obtained by the use of costly apparatus. Professor Kenwood incidentally commended the consideration of this fact to local rural authorities in England where hygiene is at a very low ebb—mainly, no doubt, on account of the supposed expense of efficient public health appliances. Many hygienic problems in the field have already been solved, and Professor Kenwood called attention to two which still awaited solution: (1) the separation of soap fats from the sullage waters of baths and washhouses to avoid clogging of the whole drainage system, and (2) the ridding of the trenches of the pest of rats and mice. Rats had been accredited with conveying trichiniasis and round worms and were suspected of conveying the virus of trench fever in which recent work suggested an intracorpuscular blood infection. The whole question of underground hygiene in view of the growing importance of subterranean shelter in warfare might demand special consideration in the future.

Some interesting practical information bearing upon the sanitary administration of a base camp was given in a paper recently read before the Section of Epidemiology and State Medicine of the Royal Society of Medicine by Captain C. G. Moor, 1st London Sanitary Company. Of the 25 men forming a sanitary section three or four, Captain Moor says, should be sanitary inspectors, five or six of the others should be men with trade experience, such as that of plumbing or carpentry, and the others may be men of good education. The chief point, he adds, is that they should be adaptable, keen, possess a general knowledge of field sanitation, and be able to carry out a practical campaign against flies, know how to build furnaces, be capable of burning camp rubbish and fæces and horse manure, construct grease-traps, &c., and pick out and remedy on the spot all minor sanitary defects in a camp. Practical details as to carrying out this work given, and the paper was generally full of hints and simple directions which experience in the camp has taught are valuable.

THE FRIENDS AMBULANCE UNIT.

This valuable unit was started early in September, 1914, within a few weeks of the outbreak of the war, and long before conscription was generally anticipated. The movement came from a number of young men who were debarred by their Quaker convictions from taking up arms, yet were eager to help their fellows in remedial work; and their desire was that that work should be as near the firing line as possible, in order that they might share to the full the dangers and hardships of the soldiers. It is voluntary, and the men provide their authorised uniform, the unit finding food and lodging only. The first party of 40 men and six

ambulance cars landed at Dunkirk, in Flanders, on Oct. 31st, 1914. Within a few days of landing they dressed the wounds of 3000 soldiers and assisted the transport and shipment of 6000.

The numbers in the ambulance unit at the present time are 876, of whom 494 are in France and Belgium. Seventy-one are on the sea in hospital ships; 311 are at hospital and ambulance work in England. The unit has had several motor convoys working at the Front in Flanders and France. The total mileage run by the unit's cars since the beginning of the war up to October, 1916, is 697,250 miles, and during this time they have transported 94,407 patients. In the hospitals organised and staffed by the unit in Flanders and France 5561 patients have been treated. The unit has provided staffs for four ambulance trains in France and two hospital ships, one of these being now in the Near East. In the relief of the civil population of Belgium the unit has received 1100 children, has cared for 192 children in special orphanages, has distributed 250,000 bottles of milk, has disinfected and distributed 1,000,000 gallons of water, has distributed 80,000 garments, has given 275,385 anti-typhoid injections, and has visited 9354 houses in search for evidences of infections. A great deal of work has been carried on in places constantly exposed to German fire. For example, the hospital of Sacré Cœur at Ypres was not given up until it had been shelled. Many expressions of appreciation have been received from responsible English, Belgian, and French authorities, as well as from officers and men who have been attended to by the unit.

Besides the ambulance and hospital work, the unit has latterly been authorised to place men referred to it in the proper way by tribunals or military authorities in other approved work of national importance, and a considerable number of men have been so brought under the discipline and supervision of the unit. It may be added that every man in the unit is there with the sanction and approval of the proper authorities and in accordance with the law of the land.

THE LOSS OF THE "BRITANNIC."

The loss is announced by the Admiralty of the British hospital ship *Britannic*, which was sunk by mine or torpedo on Tuesday morning last, Nov. 21st, in the Ægean Sea. The official statement estimates a loss of 50 lives, while of 1106 survivors 28 are injured. There is believed to have been upwards of 1000 sick and wounded on board.

The *Britannic*, which was taken over as a hospital ship on completion, was actually launched from the Belfast yard of Messrs. Harland and Wolf in February, 1914, but had never been completed as a liner. She was the largest British ship, being 47,500 gross tonnage. She was proceeding from Salonica at the time of the disaster, which occurred off the island of Zea, and the small toll of lives is accounted for by the fact that her 35 boats were successfully lowered. The loss of the vessel, however, is a serious one; she was admirably equipped, and had already done much splendid service in the Mediterranean.

MEDICAL ENTOMOLOGY IN THE WAR.—Students of medical entomology are making a serious contribution to the hygiene of the army, especially in the eastern areas. Lieutenant-Colonel Andrew Balfour's address on the Entomology of Salonica to the Salonica Medical Society has been reprinted, and is being distributed to the members of the society and the medical officers proceeding to Salonica. Colonel Balfour based his competence to speak on the subject partly on the fact that he had himself been bitten by mosquitoes, ceratopogons, Simulidæ, Stomoxidæ, Phlebotomus, Lepidoselagh, and other insects. He laid stress once more on the fact that in human excrement we have the chief source of flies, 500 of which can breed out of a single deposit, and he commended the efficacy of large simple fly-traps placed outside cookhouses and messes. He regarded all the three chief Grecian species of mosquito—*Anopheles maculipennis*, *A. superpictus*, and *A. bifurcatus*—as capable of carrying malarial infection. He had not yet met with the flea in Salonica, but this parasitic immunity did not, unfortunately, extend to the louse, to which, as he reminds medical officers, a moist temperature of 55° C. has been shown to be lethal. He concluded by a commendation of the scarab as a diligent, ingenious, and useful scavenger.

BATH CARAVANS.—The King inspected last week two new bath caravans presented by the Wounded Allies Relief Committee to the Belgian Army for use at the front. The design is due to Mr. J. R. Anderson, a well-known civil engineer, with the aim of providing the greatest number of baths in the shortest space of time. It is reckoned that each caravan will be able to deal with some 800 men in a continuous working period of 14 hours. Each van carries 12 light steel baths, 5 ft. 3 in. long by 2 ft. 2 in. wide, nested one inside the other, and is fitted on both sides with roller-controlled waterproof sheeting for forming tents with the aid of light spars and poles. Side and end sheetings are provided with openings for access and ventilation, and complete waterproof enclosures ensuring privacy are thus formed. Each tent enclosure affords accommodation for six baths, the water for which will be heated by petrol. These novel caravans will be drawn by horses from place to place wherever water can be obtained from rivers and streams.

THE SIR JOHN ELLERMAN HOSPITAL FOR DISABLED OFFICERS.—By the generosity of Sir John Ellerman, St. John's Lodge, Regent's Park, is being converted into a hospital for the use of disabled officers who require day and night attendance. The house is situated in beautifully timbered gardens, where the patients can enjoy open-air life in complete privacy. The British Red Cross Society has formed a house committee, of which Sir Arbuthnot Lane is chairman. The honorary staff includes Sir David Ferrier, Sir Malcolm Morris, Sir StClair Thomson, Mr. Lewis Smith, Mr. A. W. Ormond, Mr. James Sherren, Mr. Walton Read, and Mr. A. D. Reid. The hospital is expected to be ready for the reception of patients at the end of December.

WAR HOSPITAL MAGAZINES.—We have received No. 11 of the *Ration*, the organ of the Reading War Hospital. Like the majority of its contemporaries, it contains much to amuse and interest both by letterpress and illustration. The contributions are entirely the work of the hospital staff, whom we congratulate on the result of the employment of their very limited spare time. The magazine can be obtained at the Reading War Hospital, price 2*d*.

THE STAR AND GARTER HOSPITAL.—The British Women's Hospital Fund has collected in less than a year the sum of £150,000 for the Star and Garter Hospital at Richmond.—Owing to the generous response to the appeal for funds to found a memorial in memory of the R.A.M.C. officers who died from typhus at Wittenberg Camp, a room will be built and furnished at the Star and Garter Hospital, and a suitable tablet placed on one of the walls.

NURSES FOR MILITARY DUTY IN INDIA.—With reference to the request of the military medical authorities addressed to the Indian St. John Ambulance Association for the supply of another hundred nurses for temporary military duty, owing to the shortage of medical officers now available for civil duties, it has been found extremely difficult to train nursing candidates for first-aid and home nursing certificates which are essential in the case of each applicant. An appeal to all medical men and medical women in India, whether private practitioners or in Government employ, has been distributed asking them to render their assistance in remedying the dearth of suitable candidates by conducting classes for women in both these subjects. In this connexion it may be noted that as a special war measure the Order of St. John of Jerusalem have sanctioned the holding of both first-aid and home nursing classes concurrently, and have also agreed that two lectures a week may be delivered in each of these subjects instead of only one as heretofore.

A CONCERT will be held in aid of St. Dunstan's Hostel for Blinded Sailors and Soldiers at the Queen's Hall on Tuesday next, Nov. 28th. It is hoped that Her Majesty Queen Alexandra and Their Royal Highnesses the Duke and Duchess of Connaught will attend. The artists and the full band of the Grenadier Guards are giving their services.

THE King has sanctioned the following appointments to the Order of the Hospital of St. John of Jerusalem in England:—As Knights of Grace: Colonel E. H. L. Lynden-Bell, C.B., R.A.M.C., and Colonel Sir Bertrand E. Dawson, K.C.V.O., C.B.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Primary Fellowship Examination in Anatomy and Physiology, held on Nov. 8th, 9th, and 14th, the following candidates were successful:—

Loveday Shackell Banes, London School of Medicine for Women; Pares Chandra Datta, Calcutta, Edinburgh University and Middlesex Hospital; Robert Ovens Fisher, M.B. Tor., M.R.C.S., L.R.C.P., Toronto University, Middlesex and London Hospitals; Albert William Holgate, University College; Muriel Elsie Landau, London School of Medicine for Women; John Herbert Ellis Moore, B.A.Cantab., Cambridge and Leeds Universities; Edith Mary Ponsonby Morris, London School of Medicine for Women; Alfred Peine, Birmingham University; Hugh Reid, Liverpool University; Stanley Nahum Sennett, B.A.Cape University, London Hospital; and Elsie Maud Visick, London School of Medicine for Women.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates were successful:—

THIRD (M.B., B.S.) EXAMINATION FOR MEDICAL DEGREES.

Honours.—Kveleen Blanche Gibson Rivington (Distinction in Medicine), London (Royal Free Hospital) School of Medicine for Women; and Graham Selby Wilson (Distinction in Medicine, Pathology, Surgery, and Midwifery and Diseases of Women), Charing Cross Hospital.

Pass.—Arthur Wilfrid Adams, University of Bristol; Augustus Rollo Balmain, University of Birmingham; Frederic Vivian Bevan-Brown, Guy's Hospital; Percival Courtenay Cole, St. Bartholomew's Hospital; Charlotte Iris Fox, London (Royal Free Hospital) School of Medicine for Women; William Bashall Gabriel, Middlesex Hospital; Frank Keith Hayman, University of Bristol; Helen Ingleby, St. George's Hospital and London (Royal Free Hospital) School of Medicine for Women; Shewkiram Sahijram Malkani, University College Hospital; Francis Courtenay Mason, B.A., Middlesex Hospital; Arthur Morford, B.Sc., St. Bartholomew's Hospital; Edith Annie Shaw, London (Royal Free Hospital) School of Medicine for Women; Alfred George Simmins, Westminster and Guy's Hospitals; Eric Clarence Spaar, B.A., St. Bartholomew's Hospital; and Thomas Pearse Williams, Middlesex Hospital.

B.S. EXAMINATION (for Students who Graduated in Medicine in or before May, 1904).

Honours.—Constance Brodribb Slater, London (Royal Free Hospital) School of Medicine for Women.

The following candidates have passed in one of the two groups of subjects:—

Group I.—Charles Vincent Boland, St. Bartholomew's Hospital; Raghunath Ganesh Dani, University College Hospital; Harold Aylmer De Morgan, Middlesex Hospital; Hugh Ernest Griffiths, University College, Cardiff, and St. Bartholomew's Hospital; George Alex Sheridan Madgwick, London Hospital; and Enid Eleanora Sanger-Davies, and Elisabeth Henrietta Schwab, London (Royal Free Hospital) School of Medicine for Women.

Group II.—Robert Townly Bailey, Charing Cross Hospital; Charles Douglas Banes, King's College Hospital; Thomas Stenner Evans, University College, Cardiff, and St. Mary's Hospital; Jerusha Jacob Jhirad, London (Royal Free Hospital) School of Medicine for Women; Hugh Montagu Cameron Macaulay, B.Sc., St. Bartholomew's Hospital; Ferdinand Molina, St. Thomas's Hospital; John William Glanmor Phillips, St. Mary's Hospital; Pinthu Sai, St. Thomas's Hospital; and Elsie Stansfeld, London (Royal Free Hospital) School of Medicine for Women.

The following degrees in the Faculty of Science were recently awarded by the Senate:—

HONORARY (WAR) B.SC.

Second Lieutenant Harry Richard Jones, Edward Montague Lake, A.B., and Sergeant Ernest Edwin Perrin.

A MEETING of the Section of Odontology of the Royal Society of Medicine will be held at the Society's Rooms, 1, Wimpole-street, W., on Monday next, Nov. 27th, at 8 P.M., when an address will be given by the President, Mr. W. B. Paterson, and a report made on the Paris Dental Congress of Nov. 10th to 13th by Mr. T. A. Coysh.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.—The usual monthly committee meeting was held at the society's offices, 300, High Holborn, London, W.C., on Nov. 17th, Dr. Major Greenwood being in the chair. The reports submitted showed for the previous month a slight upward tendency in sickness claims, which was due largely to members being wounded on active service. The sickness experience proved considerably under expectation, although it is estimated that at least 1000 of the society's members are on active service in various parts of the world. Fresh proposals showed a decline on previous figures, but the advantage taken of the new endowment assurances is larger than formerly, and the total amount of such assurances should not be much less than in the previous year. It was decided to continue to accept new members who may be either actually in or about to join His Majesty's Forces in the non-combatant branches, the society's experience not appearing to justify either refusal or extra rates. Since 1914 the sum of £23,000 has been invested in various War Loans, and it is probable that, in view of the high rate of interest and security, the society will still further increase their holdings from time to time.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Pauper Lunatics.

Mr. HAYES FISHER, Parliamentary Secretary to the Local Government Board, has introduced in the House of Commons a Bill "to make provision with respect to the amounts payable and transferable in respect of pauper lunatics under Section 24 of the Local Government Act, 1888." It was read a first time. The short title is the Local Government Emergency Provisions (No. 2) Bill.

National Insurance Funds.

According to a statement made by Mr. C. ROBERTS, representing the National Insurance Commission, the amount of National Health Insurance Funds paid over to the National Debt Commissioners for investment in public stocks was at Dec. 31st, 1915, with accruing interest, £30,000,000.

Sanitary Measures in India.

The Report on Sanitary Measures in India in 1914-15 has been presented to both Houses of Parliament, and been issued as a Blue-book. It deals at considerable length with the health of the European Army of India, of the Indian Army, and of the general population, and in the jails, medical institutions, and sanitary works.

Board of Pensions Bill.

The Board of Pensions Bill was read a second time by the House of Commons on Tuesday, Nov. 21st.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 15TH.

Medical Arrangements in Gallipoli.

Mr. KEATING asked the Financial Secretary to the War Office whether, in view of the fact that Army chaplains and surgeons must have special knowledge of the conditions to which wounded and sick men were subject and as to whether there were sufficient doctors, attendants, and nurses, he would take steps to call the attention of the Dardanelles Commission to the necessity of calling men of these professions to give evidence before them.—Mr. FORSTER replied: If my honourable friend will refer to the Special Commissions (Dardanelles and Mesopotamia) Act, 1916, Section 2, Subsection (1), he will see that the Dardanelles Commission has had conferred upon it by Parliament full power to obtain the attendence of any witnesses whom it may desire to hear. I do not think there is any necessity for me to bring to the notice of the Commission the value of any particular class of evidence, but if the honourable Member desires to do so no doubt the Commission would be glad to hear from him.

Nerve-strained Soldiers.

Mr. ANDERSON asked the Financial Secretary to the War Office whether cases had been brought to his notice in which soldiers discharged from the Army because of temporary or permanent mental disturbance due to the strain of modern conditions of warfare had been placed in asylums and their parents called upon to contribute to their maintenance; whether some of these soldiers were classified as pauper lunatics; whether, in the case of a married soldier, the separation allowance stopped, leaving his wife and family to have resort to Poor-law relief; and what steps he proposed to take to place the whole question on a more satisfactory footing.—Mr. FORSTER answered: No, sir; where lunacy is caused by military service the soldier's pension is more than sufficient to meet any claim the guardians may see fit to raise for the man's maintenance and no contribution from the parents is necessary. Separation allowance is succeeded by pension in these cases.

THURSDAY, NOV. 16TH.

Housing in Dublin.

Mr. CLANCY asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was yet able to make any announcement as to his intentions in the matter of financial assistance towards the solution of the housing question in Irish urban districts, and especially in Dublin.—Mr. DUKE replied: I have now received the reports on this subject from the Local Government Board, Ireland, but have not had an opportunity to consider them.

The Price of Milk.

Answering Mr. MACMASTER, Mr. RUNCIMAN (President of the Board of Trade) said: In London and in other large centres of population the retail price of milk is in general 6*d.* per quart. The increase which has occurred in the retail price appears to be in the main due to the higher prices demanded by the producers, whose expenses have, in the

majority of cases, increased considerably. I have no information at present which would lead me to accept the suggestion that the rise of price is due to manipulation by a combine.

Venereal Diseases in the Army.

Mr. HOUSTON asked the Financial Secretary to the War Office (1) whether he could give the number of men suffering from enthetic (venereal) diseases in the British Army at home and abroad as shown by his latest return and the date of that return; and (2) whether he could state the number of men reported temporarily unfit for duty or service in the British Army at home and abroad by reason of enthetic (venereal) diseases as shown in his latest return and the date thereof.—Mr. FORSTER wrote in reply: The admissions to hospitals at home from the cause in question represent a ratio of 48 cases per 1000 per annum, which is slightly less than the ratio in peace time. No figures are available for the troops abroad.

Mr. HOUSTON also asked the honourable gentleman (1) whether he could state the number of men permanently invalided and discharged out of the Army owing to enthetic (venereal) diseases, but temporarily cured of the same, during the years 1914, 1915, and 1916 up to his latest return and the date thereof; and (2) whether he could state the number of men suffering from enthetic (venereal) diseases who had been discharged uncured from the Army at home and abroad during the years 1914, 1915, and 1916, and permitted to return to their homes.—Mr. FORSTER replied: I regret that there are no statistics available. It would take much time to compile them, and I hope my honourable friend will not press me to put this additional work on a heavily strained department. I would remind the honourable Member that no men are discharged from the Army for these diseases in the infectious stages.

TUESDAY, NOV. 21ST.

The Army Reserve.

Replying to Mr. MACCALLUM SCOTT, Mr. FORSTER (Financial Secretary to the War Office) said: An Order has been issued that all group and class men who have been placed by medical boards in categories not being taken for service, and have accordingly been sent back to their homes to continue in the Army Reserve, shall be called up for medical re-examination. There has been no change in the standard of fitness for service in the Army, but the needs of the Army are not permanently fixed and limited: they change as the situation develops.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BESWICK, W. T., BROWN, W. S., M.R.C.S., L.R.C.P. Lond., CARTER, C. N., M.R.C.S., L.R.C.P. Lond., and ROBERTS, C. Y., M.R.C.S., L.R.C.P. Lond., have been appointed Casualty Officers and Resident Anæsthetists to St. Thomas's Hospital.

BOUSFIELD, G. W. J., KENDALL, G. M., M.R.C.S., L.R.C.P. Lond., MAVROGORDATO, A., M.R.C.S., L.R.C.P. Lond., and WALL, J. M., L.M.S.S.A., Resident House Physicians to St. Thomas's Hospital.

CROMPTON, K. E., M.B., B.C. Cantab., Obstetric House Physician to St. Thomas's Hospital.

HYMAN, O. H., House Surgeon to St. Thomas's Hospital.

MARRIOTT, W., NAIRNE, N. S., M.R.C.S., L.R.C.P. Lond., SAL P., M.R.C.S., L.R.C.P. Lond., and WHITE, J. S., M.B., B.Ch. N.U.Irel., Resident House Surgeons to St. Thomas's Hospital.

MCKENZIE, DAN, M.D. Glasg., F.R.C.S.E., Oto-laryngologist to the Hôpital Français, London.

MILLS, JOHN, M.B., Resident Medical Superintendent to the District Asylum, Ballinasloe.

RIVINGTON, EVELEEN B. G., M.B., B.S. Lond., House Physician to the General Hospital, Nottingham.

THOMSON, H. H., M.D. Glasg., Medical Officer of Health for Herts.

WHEELER, W. I. DE COURCY, F.R.C.S. Irel., one of the Medical Referees under the Workmen's Compensation Act, 1906, for the County and City of Dublin.

Certifying Surgeons under the Factory and Workshop Acts: HOWELL, R. V., M.B., Ch.B. Glasg. (Clacton-on-Sea, Essex); and O'DRISCOLL, T., M.B., B.S. R.U.I. (Valentia District, co. Kerry).

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).
When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

ABERGAVENNY, MONMOUTH COUNTY ASYLUM.—Temporary Assistant Medical Officer. Salary £7 7*s.* per week, with board, &c.

ASHTON-UNDER-LYNE DISTRICT INFIRMARY.—Assistant House Surgeon. Salary £150 per annum, with usual emoluments.

BATTERSEA BOROUGH COUNCIL.—Medical Consultant for Maternity and Child Welfare Centre, two afternoons a week. Salary £1 1*s.* each attendance.

BIRMINGHAM CITY, YARDLEY ROAD SANATORIUM AND TUBERCULOSIS DISPENSARY, Broad-street.—Assistant Medical Officer. Salary £300 per annum, with board, &c.

BRADFORD, ROYAL EYE AND EAR HOSPITAL.—House Surgeon (non-resident).

BRISTOL ROYAL INFIRMARY.—House Physician. Salary at rate of £120 per annum, with board, &c.

CHESTER ROYAL INFIRMARY.—House Physician. Salary £160 per annum, with board, &c.

DEVONPORT, ROYAL ALBERT HOSPITAL.—House Surgeon, unmarried. Salary £150 per annum, with board, &c.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas. Also Assistant Resident Medical Officer. Salary £100 per annum, with board, &c.

LEEDS TOWNSHIP INDOOR INSTITUTIONS, Beckett-street.—Assistant Medical Officer, indoor. Salary £215 per annum, with board, &c.

MAIDENHEAD UNION, Bray District.—Medical Officer and Public Vaccinator. Salary at rate of £160 per annum, &c.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Resident Medical Officers.

NAVAL AUXILIARY HOSPITAL IN SCOTLAND.—Anæsthetist and Assistant Medical Officer. Salary £1 per day, residence, &c.

NEW HOSPITAL FOR WOMEN, Euston-road.—Female Senior Clinical Assistant in Ophthalmic Department.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and House Surgeon. Salary £80 per annum each, with board, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone road, N.W.—Pathologist and Registrar. Salary at rate of £80 per annum and lunch.

RED CROSS HOSPITAL FOR SERBIANS.—Surgeon. Salary £10 10*s.* per week and all found.

ROTHERHAM HOSPITAL.—Junior House Surgeon. Salary £150 per annum, with board, &c.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Resident Surgical Officer.

SALISBURY GENERAL INFIRMARY.—House Surgeon, unmarried. Salary £150 per annum, with board, &c.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Registrar.

SHEFFIELD ROYAL HOSPITAL.—Ophthalmic and Aural House Surgeon, Casualty Officer, and Assistant House Surgeon. Salaries respectively £135, £130, and £120 per annum, with board, &c.

STOCKPORT, COUNTY BOROUGH EDUCATION COMMITTEE.—School Medical Officer. Salary £370 per annum.

TOTTENHAM EDUCATION COMMITTEE.—Temporary Assistant Medical Officer.

VENTNOR, ISLE OF WIGHT, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST ON THE SEPARATE PRINCIPLE.—Assistant Resident Medical Officer.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Dental Surgeon.

WEST RIDING OF YORKSHIRE.—Two School Medical Inspectors. Salary £325 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Tipperary.

Births, Marriages, and Deaths.

BIRTHS.

BLAKE.—On Nov. 18th, at Cambridge House, Portsmouth, the wife of Philip Blake, L.D.S. Eng., of a son (stillborn).

SMITH.—On Nov. 14th, at Ramsgate, the wife of S. Alwyn Smith, D.S.O., Major, C.A.M.C., of a son.

TAYLOR.—On Nov. 15th, at St. Leonards-on-Sea, the wife of C. R. Taylor, M.B., Captain, R.A.M.C., of a daughter.

VEVERS.—On Nov. 13th, at Brookville, The Avenue, Girvan, Ayrshire, the wife of Geoffrey Marr Vevers, M.R.C.S., L.R.C.P., Lieutenant, R.A.M.C., of a son.

MARRIAGES.

DIXON—SYKES.—On Nov. 14th, at St. Martin's Church, Epsom, Dudley Thomas Dixon, R.A.M.C. (T.), to Gladys Maude, eldest daughter of Mr. and Mrs. Walter Sykes, Church-road, Epsom.

LLOYD DAVIES—JONES.—On Nov. 15th, at St. Pancras Church, J. Lloyd Davies, M.D. Lond., M.R.C.P., to Gwen, younger daughter of the late John Jones, Registrar of the Swansea County Court, and of Mrs. Jones, Gellifaharen, Llandyssul.

STALLMAN GALAVAN.—On Nov. 14th, at St. Anne's Church, Upper Kennington-lane, J. F. H. Stallman, M.B., B.S., Lieutenant, R.A.M.C., to Mary, second daughter of Mrs. M. H. Galavan, of Tramore, County Waterford, Ireland.

UNWIN—ROBINSON.—On Nov. 14th, at St. Stephen's Church, Clapham Park, T. Barton Unwin, M.B., Major, R.A.M.C., to Amy Emily (Cissie), daughter of the late Thomas Henry Robinson and Mrs. Robinson, Fircroft, Clapham Park, S.W.

WALSHAM—BANNISTER.—On Nov. 17th, at the Central Mission Church, Barking-road, West Ham, Hugh Walsham, M.A., M.D., F.R.C.P., to Amy Bannister.

DEATHS.

BEST.—On Nov. 11th, after a short illness, William Jenner Best, M.R.C.S., L.S.A., D.P.H., of Louth, Lincolnshire, in his 51st year.

MOSS.—On Nov. 17th, at Sutton Court, Chiswick, William Boyd Moss, F.R.C.S., in his 88th year.

IN MEMORIAM.

STONEY.—Percy Butler Stoney, Millom, Cumberland, died Nov. 23rd, 1915, aged 67, forty years M.O.H. for Millom U.D.C.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

ARMENIAN MEDICINE.

M. Basmadjian, an Armenian resident in France, has been making reseaches for a considerable time in connexion with Armenian medical manuscripts, with the object of publishing a complete dictionary of early Armenian medical terms. Finding that in the present circumstances the production of a work of this character was impossible, he has given a preliminary account of his labours to the "Société Asiatique." Notwithstanding the many Armenian treatises upon medicine long known to exist in manuscript, only one of them has been adequately edited. This is the book written by Mekhithar of Her, which M. Basmadjian styles "La Consolation dans les Fièvres." It was composed in 1184 in Cilicia; contains 46 chapters, treating of all varieties of fever, and rules for treatment. It was published, in Armenian, by the Mekhitharist Fathers, at Venice (who have a press there), from a manuscript No. 246 of the Armenian collection in the Paris Bibliothèque Nationale. A German translation of Dr. Ernst Seidel appeared at Leipsic in 1908. At their Convent of Saint Lazarus at Venice the Armenian monks have another vellum manuscript, dated 1294, which preserves a compilation from the same work of Mekhitar, but a much larger portion of it is occupied with the translation of an Arabic work into Armenian, made, the scribe says, under the reign of King Gagik. There were two monarchs of this name, both reigning early in the eleventh century. They also have another manuscript upon medicine, written under "King" Hovhannes in the same century. At Vienna the same fraternity of ecclesiastics possess a treatise copied in 1438 by a monk named Abraham for a "Doctor" Hovhannes. This manuscript, in addition to its treatise, contains a pharmacopœia.

The most celebrated Armenian medical author was Amir-Dovlat, of Amasia, who flourished in the fifteenth century. Three important works of his are known, and M. Basmadjian has succeeded in obtaining copies of them. The first, entitled "The Utility of Medicine," was composed at Philippopolis between 1465 and 1469, a general survey of medicine, and comprised in addition an essay upon anatomy. The second work is a pharmacopœia. The third, which is by far the most valuable, bears the curious title of "Useless for Ignoramuses." It was written at Constantinople between 1474 to 1478, and is a collection of simples and dictionary of medical substances, after the style of many Arabic works of similar character, especially of one by Ibn-el-Beithar. Two manuscripts of the greater portion of this book, Nos. 244 and 249 of the Armenian texts, may be consulted at the "Bibliothèque Nationale." Another Armenian medical author of fame was Bouniat of Sebaste, but he wrote in the early seventeenth century. His work was thought to be lost, but M. Basmadjian has found a copy. It is a general treatise in 50 chapters, each of these being confined to the consideration of one special malady. Another Armenian, named Açar, who hailed also from Sebaste, and flourished in the sixteenth or early seventeenth century, left his native place and evidently resided in Persia and India. A manuscript of his upon anatomy is known, dated by the scribe as 1625, but it is a later copy. M. Basmadjian possesses an older codex written at Surat in 1657 and 1658. It contains a system of pathology and anatomy, a pharmacopœia and a materia medica, with the equivalent Arabic and Greek medical and pharmaceutical words. Açar is said to have composed it in 1622. Another Armenian medical work as complete as that of Açar is by a certain Galoust of Amasia. This is preserved in a single copy in the library of the Armenian convent at Vienna. The most interesting manuscript for medical history is probably No. 245 of the Bibliothèque Nationale. It is by a "medical priest" named Hakob. It is a sort of lexicon giving more than 2000 names of substances and plants and those of 100 diseases. No exaggerated value should be placed upon Armenian medical literature, because the authors have derived most of their information from Arabic writers, as was the case in Europe in the later Middle Ages; but when these manuscripts are re-edited, with commentaries, another chapter in the history of medicine will have been recorded.

VITAL STATISTICS OF ST. HELENA.

Major H. E. S. Cordeaux, C.B., C.M.G., Governor and Commander-in-Chief of St. Helena, in his annual report to the Colonial Office, just issued, gives the estimated civil population of the island on Dec. 31st, 1915, as 3594, being an increase of 31, as compared with the corresponding date of 1914. This figure does not include the naval and military garrison or the crew of the cable ship, *Britannia*. The birth-rate for the year 1915 was 24·4 per 1000 and the death-rate 14·7, as compared with 27·3 and 14·6 respectively in the previous year. The health of the island was on the whole good, but there were two epidemics of influenza, one of which, in March and April, was exceptionally severe and spread very rapidly; fortunately, there were no fatal cases owing to the fact that the complication of bronchopneumonia did not manifest itself as in previous epidemics. There were no cases of enteric or dysentery, but there were several new cases of both early and late tuberculosis. The latter disease appears to be on the increase, and a sanatorium for the isolation of tuberculous patients is sadly needed. Infant mortality was very high, due partly to malnutrition and partly to delay in seeking medical advice in cases of infantile diarrhœa, vomiting, and convulsions. There were 189 admissions to the Civil Hospital during the year and 11 deaths. A new operating theatre has been built. The mean temperature of the colony in 1915 was 61·9° and the total rainfall 41·590 inches.

GOOD MILK.

THE public owe a debt of gratitude to the Central Committee for National Patriotic Organisations for the pamphlets which they have published under cost price on subjects of national importance at the present time, such as the rearing of poultry, the family laundry, and the preservation of fruit and vegetables. Their latest publication is the "Little Cow and Milk Book," by the Hon. Mrs. Lionel Guest, which is full of information useful to dairy-farmers and the public in general. A novel suggestion in the book and one that deserves careful consideration is that of starting a crèche for cows in order that young stock may be reared to maturity. The high mortality among calves is said to be one of the causes of high-priced milk. The pamphlet can be obtained at 62, Charing Cross, price 2½*d*.

CERTIFIED OCCUPATIONS.

IN the latest list of certified occupations, dated Nov. 20th, 1916, there are a few items affecting more or less directly the medical man or medicine in general. The chemist (analytical, consulting, or research) is still to be treated as in a certified occupation if recommended by the Royal Society. The head attendant of a chemical laboratory, but only if married, is reserved at 25 years of age. Men lawfully and habitually engaged for dispensing medicines are to be treated as in a certified occupation if agreed to be indispensable for the needs of the population, after consultation with the Insurance Committee for the area. The attendants on lunatics are to be similarly treated if recommended by the Board of Control.

THE SAVING OF CHILD AND INFANT LIFE.

OWING to the increasing interest shown by the public in this national question the governing body of the Battersea Polytechnic, Battersea Park-road, S.W., have decided to open the hygienic department for public inspection to-day (Saturday, Nov. 25th) from 3 to 6 P.M. The lecture-rooms and laboratories, together with an exhibition of apparatus and models used for teaching purposes, will be on view. The head of the department will be pleased to explain the aim and work of the department. No tickets of admission are required.

M. L. J. is recommended to consult his medical adviser. We do not suggest treatment, either through books or otherwise.

Enquirer.—The statement in the daily press that 1651 new cases of tuberculosis were notified during the third quarter of the current year in South Shields county borough was obviously incorrect. We learn on inquiry that 110 was the actual figure. The total number of cases on the register in that borough is steadily rising, the increase being attributed by the medical officer of health to earlier notification rather than to an increase in the incidence of tuberculosis. In Woolwich, however, a definite rise in the death-rate from tuberculosis was noted in the 1915 report, and the same is the case for Walsall. The question whether war conditions are responsible in this country for an increase in tuberculosis is one deserving attention.

"*War Worker.*"—A leading article in our issue of July 8th alluded to the fate of the practices of members of the medical profession who had accepted commissions in the Royal Army Medical Corps, and stated that this fate had not yet received the amount of practical attention which it deserved. In THE LANCET of July 22nd several schemes under consideration by the Central Medical War Committee were outlined and the general principles indicated which should hold in any particular case. A scheme formulated by Dr. T. Campbell, of Wigan, was given at length, as this met with a good deal of support in Lancashire. A more definite stage has now been reached, as the Central Medical War Committee has agreed on a series of recommendations, which appeared, and were commented on, in our issue of Nov. 11th.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
MEETINGS OF SECTIONS.

Monday, Nov. 27th.

ODONTOLOGY (Hon. Secretaries—F. R. Smyth, F. N. Doubleday, J. Howard Mummery): at 8 P.M.
Presidential Inaugural Address by Mr. W. B. Paterson, F.R.C.S.
Report on the Inter-Allies Dental Congress, Paris, November, 1916, by Mr. T. A. Coysh, L.D.S.Eng.
Paper:
On "Ulcerative Peri Odontitis of Fuso-Spirillary Origin" by Dr. Frank Taylor and Captain W. H. McKinistry, R.A.M.C.
Dr. John Eyre has kindly promised to open the ensuing Discussion.

Tuesday, Nov. 28th.

MEDICINE (Hon. Secretaries—Charles R. Box, W. Cecil Bosanquet): at 5.30 P.M.
Papers:
Dr. H. Batty Shaw and Dr. Woo: Six Cases of Œsophagectasia.
Dr. F. Parkes Weber: Acquired Syphilis of the Lungs.

Friday, Dec. 1st.

LARYNGOLOGY (Hon. Secretaries—Cecil I. Graham, Frank A. Rose): at 4 P.M.
Cases and Specimens will be shown.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.
FRIDAY.—8.30 P.M., Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.
Course of Lectures on the Anatomy of the Human Body, for First aid and Ambulance Students:—
MONDAY.—5 P.M., Lecture XII.:—Prof. A. Keith: The Skin and Mucous Membranes. The More Common Accidents to which they are Exposed.
Anatomical Preparations and Specimens used for illustration will be on exhibition in the Theatre from 3 P.M. to 5 P.M. on each lecture day, and between 10 A.M. and 5 P.M. in the Hall of the Museum on the following day.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.
TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham): Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).
TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. C. H. Hayton). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting). 3.30 P.M., Special Demonstration:—Dr. G. G. Macdonald: Clinico-pathological Methods in the Diagnosis of Disease.
WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. C. H. Hayton). Children Out-patients (Dr. T. R. Whipham): Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients (Dr. H. W. Barber). 5.30 P.M., Eye Operations (Mr. R. P. Brooks).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie).
FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

LONDON HOSPITAL, Mile End-road, E.
THURSDAY.—11 A.M., Dr. J. H. Sequeira: Early Diagnosis and Treatment of Syphilis. (Lecture II.) In connexion with this lecture Dr. J. McIntosh will give a Practical Demonstration of the Examination for Spirochætes and Wassermann Test.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.
TUESDAY.—6 P.M., Dr. W. K. Sibley: Scabies and its Treatment.
THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Acne, real and "so-called."

THE THROAT HOSPITAL, Golden-square, W.
MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, *and when accompanied by blocks it is requested that the name of the author, and if possible of the article, should be written on the blocks to facilitate identification.*

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the rates shown, whatever be the weight of any of the copies so supplied.

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Newspapers are not at present being sent forward to neutral European countries unless posted direct from the office of publishers or newsagents who have obtained permission from the War Office for this purpose. The Publisher of THE LANCET has obtained the required permission, and he will forward copies direct from the Office to any neutral country on receipt of instructions.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 22nd, 1916.

Date.	Rainfall.	Solar Radiation Vacuo.	Maximum Temp. Shade.	Min. Tem.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 16	...	62	42	39	37	39	Cloudy
,, 17	...	69	40	34	32	35	Cloudy
,, 18	...	43	43	35	34	34	Overcast
,, 19	0·50	43	43	35	39	39	Raining
,, 20	0·79	56	47	37	42	43	Raining
,, 21	0·01	57	48	39	42	43	Misty
,, 22	...	65	49	35	37	38	Overcast

Other information which we have been accustomed to give in these "Readings" is withheld for the period of the war.

The following journals, magazines, &c., have been received:—Medical Review of Reviews, Clinical Medicine, Bulletin of the Office International d'Hygiène Publique, Archives de Médecine et de Pharmacie Militaires, Canadian Practitioner, Military Surgeon, Review of Neurology and Psychiatry, Canadian Medical Association Journal, Canadian Journal of Medicine and Surgery, British Journal of Dental Science, American Medicine, Cleveland Medical Journal, Journal of the Missouri State Medical Association, American Journal of Medical Sciences, British Dental Journal, Rhodesia Agricultural Journal, Pediatrics, South African Medical Record, Public Health, Surgery, Gynecology and Obstetrics, Medical Times.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.
Surgical Anatomy. By J. A. C. Macewen, B.Sc., M.B., C.M. Second edition. Price 10s. 6d. net.

CASSELL AND CO., London.
Clinical Methods. By R. Hutchison, M.D., F.R.C.P., and Harry Rainy, M.D., F.R.C.P. Edin., F.R.S.E. Price 10s. 6d. net.

CHAPMAN AND HALL, London.
Hope of the Future: Management of Children in Health and Disease. By Dr. Mary Scharlieb. Price 6s. net.

CHURCHILL, J. AND A., London.
Healthy Marriage. By G. T. Wrench, M.D., B.S. Lond. Price 3s. 6d. net.

CONSTABLE AND CO., London.
Text-book of Elementary Chemistry. By F. Mollwo Perkin, Ph.D., F.I.C., F.C.S., and Eleanor M. Jaggers. Price 3s. net.

CORNISH BROS., 39, New-street, Birmingham.
The Panel Doctor: His Duties and Perplexities. By T. M. Tibbetts, M.D. Lond., Member of the Staffordshire Insurance and Panel Committees. Price 1s. 6d. net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.
Military Surgery. By Dunlop Pearch Penhallow, S.B., M.D. Harv. With Introduction by Sir Alfred Keogh, K.C.B., Director-General, A.M.S. Price 15s. net.

GREEN, W., AND SON, Edinburgh.
The Basle Anatomical Nomenclature; An Alphabetical List of Terms showing the Old Terminology, the B.N.A. Terminology, and the Suggested English Equivalent. By H. B. Jamieson, M.D., M.B., Ch.B. Edin. Price 6s. net.

LEWIS, H. K., London.
Biology of Tumours. By C. Mansell Moullin, M.A., M.D. Oxon., F.R.C.S., Lieutenant-Colonel, R.A.M.C. Price 2s. 6d. net.
Chart of the Natural Progression and Coördination in School Subjects from the Child's Point of View. Price 1s. 6d. net.

LIPPINCOTT CO., J. B., Philadelphia.
Care and Feeding of Infants and Children. By Walter Reeve Ramsey, M.D. Price 9s. net.
Catarrhal and Suppurative Diseases of the Accessory Sinuses of the Nose. By Ross Hall Skillern, M.D. Price 21s. net.

MACMILLAN, MESSRS., AND CO., London.
Collected Papers on Circulation and Respiration. Second series: Clinical and Experimental. By (the late) Sir Lauder Brunton, Bart., F.R.S., &c. Price 5s. net.

SAUNDERS, W. B., COMPANY, London.
Diseases of the Eye. By G. E. de Schweinitz, M.D., Prof. of Ophthalmology in the University of Pennsylvania. New eighth edition, enlarged and reset. Price 25s. net.
Surgery of the Spinal Cord. By Chas. A. Elsberg, M.D., Prof. of Clinical Surgery, New York University. Price 21s. net.

WRIGHT, JOHN, AND SONS, Bristol.
Diseases of the Throat, Nose, and Ear. By W. G. Porter, M.B., B.Sc., F.R.C.S. Ed. Second edition. Revised by P. McBride, M.D. Edin., F.R.C.P. Ed., F.R.S.E., during author's absence from England in service of his country. Price 7s. 6d. net.

Communications, Letters, &c., have been received from—

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I.—Incorporated Society of Trained Masseuses, Lond., Sec. of; Capt. A. C. Inman, R.A.M.C.; Insurance Committee for the County of London.

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